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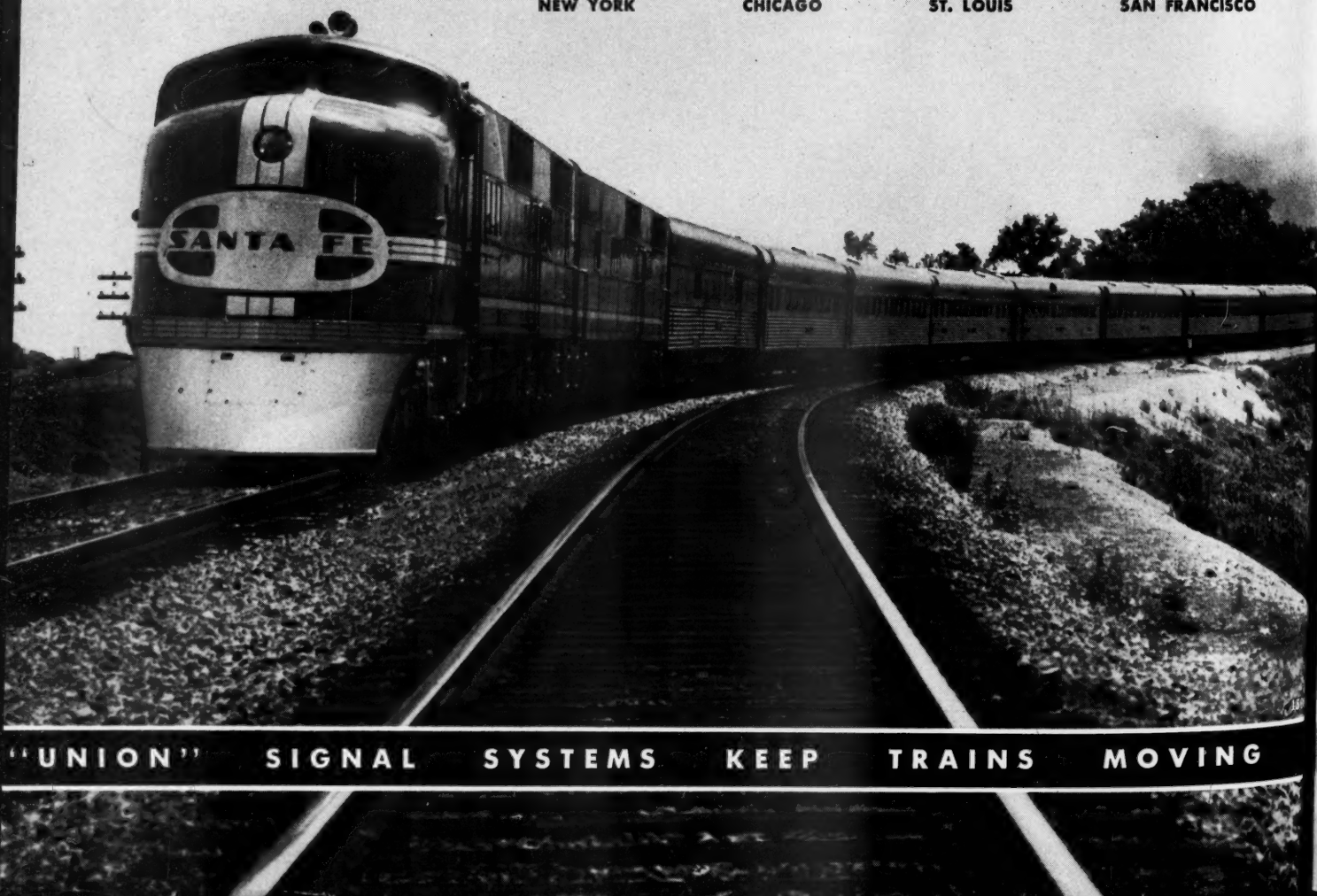
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# Shall We Have Stateism in the United States?

Although an overwhelming majority of the American people finally favored this country entering the last great war in Europe, an overwhelming majority are opposed to letting us be drawn into the present war. Why their present attitude? Also, seemingly, a large majority are in favor of repealing the present embargo on shipment of arms because they believe this would help the British and French. But why do they wish in this—or any other way—to help the British and French?

It is a plain fact that the greatest issue being fought over today in almost every country in the world, whether it is at peace or in a war, is the issue of *liberty versus stateism*. Is the attitude of the overwhelming majority of the American people toward this country getting into the war, and also toward the belligerents in Europe, due to their recognition of this, and to the fact that they are opposed to stateism? This paper, in an editorial in its issue of October 21, briefly described the existing systems of stateism in Russia and Germany. As we then said, while the government in Russia avows its hostility to all private property, and the government in Germany pretends to leave the ownership of property to the people, it is nevertheless true that "under both systems the dictator is actually the state, and uses all the people and all property as if they belonged to the state."

### War Versus Freedom

This system has not heretofore existed in Great Britain or France. In these countries the people have had liberty as it has existed and been understood in the United States—i.e., (1) private ownership and management of most property and (2) freedom of the individual to say and do much as he likes as long as he does not violate the equal rights of others. But as soon as Great Britain and France engaged in war with Germany their governments considered it necessary in large measure to adopt the system of stateism—i.e., greatly to restrict all the previous rights of their people to manage their own property and to say and do what they please. It was considered necessary to

adopt this large measure of stateism to enable the British and French governments to carry on war as effectively as it was assumed the omnipotent German state would. A very large and probably preponderant part of the opposition to this country becoming involved in the war unquestionably is due to the well-founded fear that this would lead immediately, as it has in Great Britain and France, to establishment of a large, or approximately complete, measure of stateism here, and probably would ultimately render it impossible to restore individual freedom and private enterprise. Likewise, unquestionably, the sentiment of a large majority of Americans in favor of so-called "neutrality" legislation that would repeal the arms embargo is due to a desire on their part to see the German system of stateism defeated by two nations whose policies as respects individual freedom and economic enterprise have been similar to our own.

### Stateism in Europe Adopted in Peace

But, while under modern conditions the establishment of partial or complete stateism in any country is almost sure to be the immediate result of its becoming involved in a great war, it is not a fact that war alone is the cause of stateism or that it can be avoided by a nation merely remaining at peace. Neither in Russia, Italy nor Germany was the present system of stateism originally established when the country was in a war or immediately threatened with one. On the contrary, in each of these countries its present system of stateism was established after, and in Italy and Germany long after, the last great war *and in time of peace*. Why? Partly on the pretext that it was necessary to strengthen the nation for carrying on war, but principally on the ground that it would strengthen the country's *economic system and increase the prosperity of some or all classes in time of peace*.

It is extremely important that at the present juncture this fact should be emphasized as strongly as possible to the American people. Why? Because there are many persons in this country who now have great influence and who have been for some years, and still

are, trying to promote the establishment of stateism here—as it was adopted in Russia, Italy and Germany—upon the theory that its adoption as a *permanent* policy would be economically beneficial to most of our people. And there is widely prevalent a suspicion, for which there seems much reason, that some of these promoters of stateism would not be unwilling even to involve the United States in a war because of their hope and expectation that this would cause immediately a large increase of stateism and ultimately its complete adoption as a permanent policy.

### A New Dealer's Advocacy of Stateism

What is the evidence that influential people have been and still are trying to establish stateism in time of peace? Here is some of it: A. A. Berle, Jr., has been for six years one of the principal brain trusters and spokesmen of the New Deal. He is now assistant secretary of state, and held that office when a few months ago he expressed certain views in testifying before the government's Temporary National Economic Committee. And the views he expressed were then accepted as being, and have never since been authoritatively declared not to be, the true doctrine of the left wingers of the New Deal. After asserting that "private enterprise has failed," Mr. Berle said in part:

"Briefly, the government will have to enter into the direct financing of activities now supposed to be private; and a continuance of that direct financing must mean inevitably that the government ultimately will *control and own those activities*. Put differently, if the government undertakes to create wealth by using its own credit at the rate of four billions or so a year, and if its work is well done, the government will be *acquiring direct productive mechanisms* at the rate of four billions' worth a year or thereabouts. *Over a period of years the government gradually will come to own most of the productive plants of the United States.*"

Mr. Berle also said, "I am frankly biased in favor of public ownership of certain forms of wealth," mentioning as examples railroads, electric power and mineral resources, and added, "The government undoubtedly could mine and deliver ore from the Minnesota fields without difficulty. Conceivably, it could smelt the ore into steel."

These were frank declarations in favor of the substitution on a huge scale of *stateism* for numerous forms of private enterprise—because economically stateism is *government enterprise* as contrasted with and opposed to private enterprise. But when you vest the ownership of vast amounts of property in the state you automatically put the control and management of all that property in the hands of public officials, thus adding *great economic power* to the other powers of government and thus also *vastly increasing the power of the politicians in control of the government*. And all experience shows that the more you increase the power of the politicians in control of the government the more you will intensify and embitter the struggle for that power until finally it will become concentrated in a ruling clique—as has actually occurred in Italy, Germany and Russia—that will use it for its own purposes,

regardless of the rights and welfare of anybody and everybody else.

### The American System Versus Stateism

The governmental system heretofore prevailing in the United States was framed as it was *for the express purpose of preventing a vast accumulation of power anywhere*. First, the total power of the federal and every state government was strictly limited by bills of rights which prohibited them from doing many things, the purpose being to leave the people with the largest practicable measure of personal and *economic* freedom. Second, even the limited powers given to government were divided between executive, legislative and judicial branches in order that each of these branches would check any effort of either of the other branches to acquire and exercise excessive power. Finally, for generations it was the policy of our governments not only not to try to seize economic power themselves, but also to prevent any citizen or combination of citizens from acquiring excessive economic power.

Our courts early accepted as part of our law the common law of England prohibiting the creation of private monopolies in naturally competitive industries; and in 1890 Congress, by passing the Sherman anti-trust law, gave statutory effect to this common law prohibition. And three years earlier Congress had, by passing the Interstate Commerce Act, applied by statute to the railroads the common law principle that a natural monopoly was subject to government regulation.

### How Some Business Men Promote Stateism

It necessarily follows from the foregoing indisputable facts that every step taken toward great concentration of power, whether in the hands of private monopolists or in the government, is absolutely contrary to the original and traditional governmental and economic policy of the United States. And it doesn't make any difference by whom or for what real or pretended purpose the concentration of power is promoted, if it is intended to be permanent. It is contrary to that original and traditional policy for New Dealers to promote stateism as advocated by Mr. Berle. But it is equally contrary to it for stateism to be promoted by business men and their organizations as is done when they advocate huge expenditures by government on waterways and highways for commercial transportation, regardless of their economic value, and allowance of their use free or at less than cost by carriers that are not regulated as the competing railways are. This plainly is stateism, because by putting government investment in unfair competition with private investment it tends to substitute the former more and more for the latter—which is exactly what Mr. Berle advocates as a means of causing the government gradually over a period of years to "come to own most of the productive plants of the United States."



If our country is in danger of being drawn into the war, this is in spite of the fact that an overwhelming majority of its people are opposed to it; and one principal reason why many are so strongly opposed to it is that they know our involvement in a war would result immediately in the establishment of a large or virtually complete measure of stateism from which probably it would be forever impossible to free ourselves.

### "Planned Economy" Again

But we are not in danger of stateism merely or mainly because we may get into war. We are in danger of it mainly because so many were promoting it before the war began and are now promoting it more strongly on the pretext that its advancement is a necessary preparation for war. For years before the present war they were promoting what they called a "planned economy" the theory of which is the same as the theory of stateism as already adopted and in actual practice in Russia, Italy and Germany—i.e., the theory that the state must assume the virtual or actual management, or even the virtual or actual *ownership* and management, of all property in the interest of a great majority of the people, and that the state must be made all-powerful in order to enable it to manage everything and prevent anybody from talking against, or otherwise interfering with, its management. The advocacy of "planned economy" had fallen more or less into abeyance here before the present war began because the New Deal's "planned economy" policies had been far from successful and the people plainly were turning against them. But now, with a real or alleged danger of war confronting us, the "planned economy" is again rearing its head, and its advocates are telling us that it has become more necessary than ever as a means of preparing us for war and, if we become involved, of enabling us effectively to carry war on.

### Our Real Danger Is at Home

What this means is plain. If we engage in war it will be to make the world safe from the stateism of Germany, and perhaps Russia—as we once went in to "make the world safe for democracy." And in order to make certain that we will save ourselves from stateism in case of war, *we are to adopt it before we get into war.* But why partially, largely or even entirely abandon individual freedom and private enterprise while we are still at peace—in order to prepare ourselves to fight for them if we get into war? Why not, instead, make sure that we don't lose them as long as we are at peace—and then also make as sure as humanly possible that we will stay at peace. They are well worth fighting for—more worth fighting for than all other human treasures—but they are quite as well worth fighting for while we are at peace as they would be if we became involved in war; and we can fight for them much more advantageously and effectively while we are still at

peace, and if we stay at peace, than we could during or after our participation in a war.

The real and dangerous enemies of the American system of human liberty, *and of the private enterprise which is the most essential part of that liberty*, are not abroad—not in Italy, Russia, or even Germany—but right here at home. They are the advocates of a "planned economy" to be established and run by politicians. They are those who, like Mr. Berle, advocate "government investment" on a huge scale for the avowed purpose of driving out and destroying private investment and private management. They are business men such as compose and support the Mississippi Valley Association and the National Highway Users' Conference, and thus promote stateism for their own selfish purposes while pretendedly opposing "planned economy" and all other policies tending to establish stateism. If we successfully oppose all the policies now being promoted in this country to establish stateism here in time of peace we will have our hands full without engaging in war—and we will thereby restore the American system, and recover our prosperity. And if we do not in time of peace successfully oppose these domestic policies tending toward stateism it won't make much difference to us in the long run whether we get into a war or not.

\* \* \*

### A Railroad Officer's Observations on the Telephone Company's Public Relations

"The wife of a business acquaintance is a former office employee of the Telephone Company in this city, and continues to work for them occasionally as a substitute during vacation periods, etc. We have had this lady and her husband over at the house for the evening on a couple of occasions and, purposely, I have taken a few 'ribs' at the telephone outfit just to see what reaction I would get from this lady.

"Well—I'll bet there isn't one out of a hundred railroad employees, or more than one out of ten railroad officers, who could have given as intelligent or convincing answers to jibes against the railroads as this lady did to my ribbing of the telephone company. She was patient and not argumentative in answering my unfair criticisms. Her attitude was that, not of excusing anybody, but merely trying to explain, on the assumption that her listener was really intelligent enough to understand and be interested in the true facts—her whole handling of the situation being topped off by a fine loyalty that could not fail to impress the hearer.

"Was she an exception? Well, just to find out, we moved our home a month ago and had a telephone employee changing the phone and I tried the same tactics on this chap that I had on the lady; and with the same results. Every bit of fault-finding that I was able to think of was parried by him and explained away with the utmost courtesy, patience and tact.

"Then, to check further this little experiment of mine, I stopped a fellow the other day who was working by a manhole on an underground wire-laying job; and again I received the same intelligent and tactful treatment.

"Results like this don't just happen—they are 'planned', and they represent years of systematic endeavor by far-seeing telephone executives. And, of course, the results are rung up in the cash register just as surely as systematic planning in the operating and technical departments also have their favorable financial effect."

## What Will the Traffic Bear?—37

We will reprint this series of articles to date in convenient pamphlet form if our readers indicate that they want enough copies to justify our doing the job. The price will not be more than 35 cents a copy (with the figure shaded on quantities of 100 or more). If you are interested, write us immediately at 30 Church Street, New York.

\* \* \*

Admittedly a lot of railroad people are distrustful of any attempt to base rates on costs. To



the extent that facts can be found to justify their scepticism, such distrust is praiseworthy. But there is at least *some* evidence on the other side of the picture, viz:

1. The railroads are practically the only industry which has not made use of average cost experience to determine *how low* they can profitably go in pricing their services. (We are not here talking about routine cost-finding on all traffic—that is a horse of an entirely different color.)

2. There is overwhelming evidence of a general nature indicating that railroad operating costs are far lower than their competitors' on most traffic—hence it appears to follow that **bas**ing competitive rates on costs (insisting that competitors do likewise) would restore a large volume of traffic to the railroads, while maintaining a comfortable profit margin on it.

Regulatory opinion has pretty generally got around to the view that comparative costs are the most reliable method for adjudicating in the public interest the conflicting claims of competing forms of transportation.

Admittedly, it is impossible to assign all of the expenses incurred in the handling of a particular package of freight directly to that particular package. The exact cost is not ascertainable, but that does not mean that it is impossible to arrive at reliable averages and approximations. Such average costs have long been compiled by the railroads to determine whether a given rate causes other traffic to be unduly burdened. The railroads now generally use such figures to prove their respective rights and the courts have recognized the propriety of their use in such cases. **What is proposed here is simply that this long-standing and effective device be given a wider use—in a field where it gives great promise of helping the railroads to regain business.**

The problem of allocating costs on a fair basis is no harder for the railroads than it is for many other industries which have to divide large joint costs among many products of varying value. For example, the packers now quite generally process and market cattle, hogs, sheep, poultry, eggs, cream, vegetables and fruits, and even retailed them until the Supreme Court divorced them from that business. In determining costs, the packers also must consider a great variety of by-products. As an indication of the many costing complexities the packers have had to contend with, consider two beef cows weighing exactly the same but which vary 50 pounds when dressed.

Their experience has not been static either—for example, the evolution from the range "Longhorn" to the Angus, Hereford, Shorthorn, etc., materially changed the net amount of dressed beef and other products in relation to gross weight. As another example of packers' costing complexities—blood, bone meal, fertilizer and ammonia products come from all animals slaughtered, and not the beef cattle alone.

These many complications have not prevented the packers from assigning expenses by experience, giving them "educated guesses" to use in formulating price policies. And the packing business is a profitable business. Of course, the packers have also had to consider "what the traffic will bear" in determining the maximum profit they could reasonably expect from each product.

Such cost approximations are just as practical and ought to be just as useful in the railroad business as in the packing business. Top prices, of course, are limited by "what the traffic will bear" but this should not prevent "educated guesses" as to costs from being used to set the lower limits. Sound economic theory parallels sound business experience in urging this practice on the railroads.



# Problems of Locomotive Operation Discussed at Chicago

Fuel and Traveling Engineers in heavy program deal with train handling, fuel economy, and utilization of locomotives

**W**ITH a registration of about 300 the Railway Fuel and Traveling Engineers' Association held its third annual meeting at the Hotel Sherman, Chicago, on October 17, 18, and 19. Following the opening session at which the Fuel and Traveling Engineers' Association joined with three other associations of mechanical-department supervisors in listening to an address on Training and Coaching Supervision, by L. W. Baldwin, chief executive officer, Missouri Pacific, the program of the association was continued in four sessions, under the chairmanship of the president, John R. Jackson, engineer of tests, Missouri Pacific. The program included ten committee reports, in addition to a number of addresses and individual papers. Those who addressed the association were Lee Robinson, superintendent of equipment, Illinois Central; W. A. Hurley, assistant general superintendent, New York, New Haven & Hartford; and George G. Leahy, Republic Coal and Coke Company, representing the National Coal Association. Roy V. Wright, managing editor, *Railway Age*, was also called upon for a short talk. Papers were presented by E. L. Woodward, western mechanical editor, *Railway Age*; and by F. P. Roesch, vice-president, Standard Stoker Company.

## The New Officers

Elected to serve for the coming year were the following officers: President, G. M. Boh, district road foreman of engines, Erie; vice-presidents, W. H. Davies, superintendent air brakes, Wabash; L. E. Dix, fuel supervisor, Texas & Pacific; and A. A. Raymond, superintendent fuel and locomotive performance, New York Central. The following were elected to serve on the Executive Committee for two years; J. A. Burke, supervisor air brakes, Atchison, Topeka & Santa Fe; E. E. Ramey, fuel engineer, Baltimore & Ohio; W. C. Shove, general road foreman of engines, New York, New Haven & Hartford, and W. R. Sugg, superintendent fuel conservation, Missouri Pacific. A. G. Hoppe, assistant mechanical engineer, Chicago, Milwaukee, St. Paul & Pacific, and R. S. Twogood, fuel engineer, Southern Pacific, were elected to the Executive Committee to serve for one year.

Summaries of the addresses and a selection of the committee reports follow. Other papers and reports not included here were presented on the following subjects: What Can the Members Do to Promote the Effectiveness of the Association, by E. L. Woodward; Stationary Power Plants—R. S. Twogood, chairman; Locomotive Firing Practice—Oil—R. S. Twogood, chairman; Locomotive Firing Practice—Coal—W. C. Shove, chairman; Steam Turbine and Steam Condensing Locomotives—L. P. Michael, chief mechanical engineer, Chicago & North Western, chairman; Coal Preparation, Inspection and Utilization—S. A. Dickson, supervisor fuel, Alton, chairman; and Fuel Records and Statistics—E. E.

Ramey, chairman. Some of these will receive attention in later issues.

## Fuel Conservation from the Viewpoint of the Superintendent

The opportunity to save fuel is ever present in the operating department, said W. A. Hurley, assistant general superintendent, the New York, New Haven & Hartford, in his address. He outlined the relations of the various officers on the division to the problem of fuel economy. The skill with which the chief train dispatcher makes up the timetables has a marked effect on the coal pile, and the smoothness with which the dispatchers and yard masters work together in getting cars out of the yard and trains into the yard without delays directly affects fuel economy. He pointed out the importance of care in establishing engine ratings. Either under-rated or overloaded locomotives waste fuel. The happy medium must take account of the need to maintain the service which the patrons expect.

"The train dispatcher," said Mr. Hurley, "being the supervising official with whom all the men on the road come in direct contact practically each day, undoubtedly has the opportunity in the course of his daily work to do more than many other employees to get 100 per cent efficiency, with its resultant savings in fuel and satisfied customers. When this feeling of teamwork is instilled and established on a division, unnecessary stops and delays are eliminated and the pounds of fuel per thousand gross ton miles immediately decrease."

## New Education for the Enginemen

After referring to the opportunities in the handling of locomotives through the engine terminal to prevent waste of fuel, Mr. Hurley came to the engine crews. "It is not always the fault of the enginemen and firemen," he said, "that they are not fully posted on all the refinements of the modern locomotive. Many of these improvements have come along in the last few years, and are somewhat complicated in their construction and handling. All of us are growing older, and some of us do not have the faculty that we did 20 years ago to absorb quickly the knowledge that is necessary and helpful in our everyday work, unless some supervisor sits with us and explains just what it is all about. It has been my experience that a 30-minute talk with a person who is fully qualified on his subject is worth more than two hours' time in trying to fathom out a book of instructions.

"An engineman arriving at the enginehouse after completion of his day's run usually has his mind filled with items which he intends to enter in the work book. Some are necessary, while others may be partly imagination. Whether or not these items are properly reported in a

manner that enables the foreman or inspector to know just where to look for the trouble and whether or not to order the pit foreman to dump the engine, depends to a large extent on just what kind of a road foreman or fuel supervisor is in charge of the territory over which this engineer operates. If he has never been properly instructed on how to report work in the right way, we may expect such items as these on the work book: 'Engine blows.' 'Engine pounding her head off.' 'Engine don't steam.' 'Can't keep water in boiler.' 'Engine won't run.' 'Steam leaks around front end; can't see signals.' On the other hand, if the crew has been properly instructed by the road foreman or fuel supervisor, we may expect reports like the following: 'Engine blowing in right cylinder; renew cylinder packing.' 'Left main rod pounding; reduce back-end brass.' 'Right main crown brass worn.' 'Engine not steaming properly due to load of fine coal; not necessary to dump.' 'Engine not steaming; flues plugged.' 'Two bricks missing from arch, left side; clean out openings in grates.' 'Injectors not working properly; clean out tank and strainers in tank hose.' (This last item would be given to the ash pit foreman by the engineer with instructions not to fill the tank with water until this work had been completed.) 'Pins in valve motion, right and left sides, worn.' 'Clean out exhaust nozzle.' 'Repack left piston.' 'Staybolt leaking under lagging about center of boiler, right side.'

"If these two engineers happened to be on opposite sides of the same run, a glance at the train sheet and at the coal pile on arrival at their terminal would undoubtedly tell another interesting story.

"Education, today more than ever before, has become a necessity. Practically all large and small business concerns are forming educational courses for their employees better to fit them for their positions in these days of keen competition. Why should the railroad man be different from the employee of any large selling organization? The railroads sell transportation, and transportation only. Just how well we succeed in the next few years to come depends to a considerable extent on how well we educate our employees."

Mr. Hurley said that the answer to these conditions for the traveling engineer and fuel supervisor is to ride every locomotive as often as possible. "The enginehouse road foreman or fuel supervisor, like the office trainmaster and the switch-cabin yardmaster, is obsolete," he said. "Get away from the office and the enginehouse detail! Leave a note for the general foreman or call him on the telephone."

## Locomotive Maintenance and Operation

Lee Robinson, superintendent equipment, Illinois Central, in an address on Maintenance and Operation of Parts and Appliances which have to do with good combustion, emphasized the need for close co-operation between those having to do with operation and those charged with the responsibility for maintenance; indeed, between all departments. The time has passed, he said, when railroad men can afford to confine their interests to narrow departmental compartments; they must work together for the best interest of the railroad as a whole.

He pointed out the splendid record which has been made since 1920—an increase in freight-train speed of 53 per cent; in gross train load, of 29 per cent; in gross ton-miles per train-hour, of 96 per cent; in gross ton-miles per active locomotive, of 50 per cent, with a decrease in coal consumption per locomotive-mile of 14

per cent. This record, he said, is not enough because, with other forms of transportation taking business from the railroads, government bodies and other organized interests pressing for lower rates on the one hand and increasing costs of labor and materials on the other, the only opportunity to maintain a reasonable margin of profit is to reduce the cost of operation. He also warned that the demand for more speed, both in freight and passenger service, has increase train-operating costs and created avenues for wasteful practice which will get out of bounds if not closely watched.

Such are the problems of today. In speaking of the outlook for the near future, Mr. Robinson continued in part as follows: "Has the conventional steam locomotive reached its ultimate development to meet economically the demands placed upon it? Can a reciprocating type of engine be built for higher speeds than we are now averaging without creating undue and damaging stresses both in the engine itself and the track structure? If steam is continued as the prime mover, will the unit take on some other form of design and appearance than the locomotive so familiar to all of us?"

### New Forms of Motive Power

"We now have the Diesel locomotive, which you will have to agree has developed very rapidly in the past five years. Naturally, at the outset the first cost was almost prohibitive, except for experimental purposes, but with the increasing development and use of such units, which permits building them on a production basis, the cost has gradually decreased. This cost will, no doubt, continue to be reduced, as increasing numbers are built and placed in service.

"When you consider the greatly increased distances this type of motive power can run without terminal servicing, thereby reducing the total number of units required for a complete trip, when you can eliminate a great number of auxiliary facilities such as coaling stations, water stations, cinder pits, roundhouses and turntables, then the first cost does not appear such a large factor, and gives this type of power a distinct advantage over the present steam locomotive.

"Also we have the experimental or development unit consisting of a high-pressure flash boiler with high-speed steam turbines operating condensing, geared to generators furnishing current to the traction motors for propulsion, which I think is the first challenge that steam construction in a different form than the conventional locomotive has made to the Diesel locomotive.

"Other developments in the form of more efficient transmission of power from the prime mover to the rail are becoming more and more in evidence. Now, do not get the impression that I think the steam locomotive, our old friend, is going to pass out of the picture at once, because we will have it with us for a long time, but I do say that it is going to have some lively and persistent competition."

## The Partnership of Coal Mines and Railroads

George G. Leahy, who spoke as a representative of the National Coal Association, emphasized the fact that the interests of the railroads in the coal industry are closely related and that the two industries are largely dependent one on the other. He cited the prosperity of the coal-carrying roads and the lack of prosperity of the roads which carry a relatively small volume of coal. He also made a comparison of the salesmanship of each



of the industries to the other, from which he concluded that the railroads had been the better salesman. In 1938, for instance, the average price at the mine of railway coal was \$1.92, while the average revenue received by the railway per ton of bituminous coal hauled was \$2.27. Furthermore, he pointed out that the railroads sold three times as many of their units to the coal industry as the coal industry sold to the railroads. Examining the trends in the prices charged by the two industries, he found that the price of railroad coal per ton, including transportation and handling, was \$3.94 in 1922, while 16 years later, in 1938, it had dropped to \$2.50, a reduction of 37 per cent. The railroad revenue per ton of bituminous coal had dropped during the same period from \$2.36 to \$2.27, a reduction of but 3.6 per cent.

He then showed how the railroads and the bituminous coal industry had shared in effecting a marked reduction in railway fuel costs—the railroads, by improvements in locomotives and better supervision of fuel consumption; the mines, by improvements in the quality of the fuel on the car and by reductions in price. In 1921, 162 lb. of coal were consumed per 1,000 gross ton-miles and the average cost of fuel was \$4.10. In 1938, fuel consumption had dropped to 115 lb. per 1,000 gross ton-miles and the price per ton to \$2.50. These two factors resulted in a drop in cost per 1,000 gross ton-miles from 33.2 cents in 1921 to 14.37 cents in 1938. The reduction in fuel consumption was such that the coal actually consumed in 1938 was 21½ million tons less than would have been consumed to move the same trains in 1921. The saving in money at the 1921 price was 88 million dollars and, at the 1938 price, 55 million dollars.

#### A Coal Man's View of the Diesel

Continuing, Mr. Leahy spoke in part as follows:

"Let me refer to the use of a new medium of motive power by the railroad partner which is disturbing his coal partner; that is, the Diesel engine.

"Perhaps the Diesel has some advantages over the steam locomotive, and undoubtedly the steamer has some advantages over the Diesel and so they may be considered competitive in their fields. But the railroads must have revenue freight before they can purchase or utilize either the steamer or the Diesel, and there is no competition as between the amount of freight revenue provided by the coal industry which furnishes fuel to the steamer, and that provided by the oil industry which furnishes fuel to the Diesel.

"The railroads received about 40 millions of dollars annually from the transportation of fuel oil, and about 600 million dollars annually from the transportation of bituminous coal. There may possibly be a few individual roads who receive more revenue from the transportation of oil than they do from coal, and if so, they should be commended for exploiting and extolling its merits. But for the Class I railroads as a whole, the coal revenue is fifteen times as great as the oil revenue, and it would appear not only commendable but just plain good business sense for them to exploit and extol the use of coal.

"Coal is returning very rapidly to favor for house-heating in connection with the small stoker. Every increase in the use of coal means additional revenue for the railroads, whereas whenever the use of oil grows to large proportions in any area, the oil companies construct a pipe line and keep their transportation charges within their family. Sometimes a railroad provides a portion of its right of way for the pipe line route—but, of course, we must not overlook the fact that by so

doing they usually receive the haul on the pipe that deprives them permanently of their oil revenue. Any assistance which the railroads may give to extending the use of coal will be in the secure thought that the traffic will not be diverted to a pipe line after it has been developed.

"We have seen that the railroads have put it all over the coal man in the reciprocal purchase and sale of their respective commodities, and now we find that the railroads are pikers and second-rate salesmen themselves when compared to the oil men. The year 1938 is typical of preceding years. In that year the railroads received from the oil men revenue for transportation of 37 million dollars, but they paid out to the oil men for fuel oil and gasoline 57 million dollars. Contrast that with coal for the same year when the railroads received from the coal men for transportation 511 millions of dollars, and paid out to the coal men for coal 174 millions."

### The Use of Brakes to Control Freight-Train Slack

Slack action is the major cause of damage to equipment and lading. While it cannot be entirely eliminated, it can be controlled so as to avoid material damage. The successful handling of freight trains involves a gradual readjustment of train slack; and is equally important during the starting and stopping. Train slack cannot be changed quickly and at the same time smoothly.

On the Missouri-Kansas-Texas short high-speed trains of 75 cars and under are very difficult to handle. The road characteristics are such—hog backs and curves—that while the effort is being made to operate at high speed the slack action is so severe that it cannot be tolerated. We now use the brakes for slack control. Our freight train handling instructions are, in part:

"A—Considering all factors that enter into safe train handling, it will be necessary to discontinue drifting wherever possible and resort to the use of pulling throttle against brake application. This can be done as per item B. Wherever grade conditions are such that the methods in item B cannot be used and it is necessary to drift this must be done at a lower rate of speed."

To control the train at high speed for safe operation and to control the slack action at such location where it will run hard and where no definite speed reduction is involved, the following operations are used:

"B—Use a pulling throttle. Have the slack all out. Make the first reduction 6 lb. Keep the locomotive brake from applying through the entire operation, and while the brake-pipe service exhaust is discharging open the throttle three or four notches in order to have the locomotive pulling harder while the brakes are applying. Use this brake application until the results have been accomplished. When ready to release, place the brake-valve handle in running position, leaving it there. In case the speed increases, make another light reduction."

At locations where a definite speed reduction is to be made the following operations are made:

"C—Use a pulling throttle having the slack all out. Make the first reduction of 6 lb. Keep the locomotive brake from applying throughout the entire operation, and while the brake pipe service exhaust is discharging open the throttle three or four notches in order to have the locomotive pulling harder while the brakes are applying. After the service exhaust ends, gradually reduce the throttle to a light pulling throttle. If necessary, make a few additional light reductions 2 lb. at a time. When

ready to release the brakes, place the brake valve in running position; at the same time reduce to a light drifting throttle."

When making stops we use the following operations: "D—Use a pulling throttle. Have the slack all out. Make the first reduction of 6 lb. Keep the locomotive brake from applying at this time, and while the brake-pipe service exhaust is discharging open the throttle three or four notches in order to have the locomotive pulling harder while the brakes are applying. After the brake-valve exhaust ends, reduce to a moderate pulling throttle, easing off if necessary to maintain this. If necessary, make additional light reductions of 2 lb. Then, when within 8 or 10 car lengths of being stopped, use sand continuously. When within 40 ft. of being stopped, make a reduction of 6 to 8 lb., allowing the locomotive brake to apply and shut the throttle, having the brake-valve exhaust open when the train stops."

The three above operations described are used with all make-up of trains except with the heavy loads behind. With such train make-up we reduce to a light drifting throttle before the brake application as per item "A."

We believe the freight train handling instructions, as contained in Air Brake Association Book No. 8, are ideal for freight-train holding and are used by us with very good results. We only deviate from these instructions as regarding the total reduction to be released and the use of running position for releasing and charging. We also believe that with the above methods of train handling advantage is taken of the AB brakes in the train in the direction of expediting train movement with safety.

#### The Modified H-6 Brake Valve

To simplify the engineer's work in connection with train handling, we have modified our H-6 brake valves in such a manner that we now have a first service position and when used will make a 6 lb. brake pipe reduction and at the same time hold off the locomotive brake when the first reduction is being made. This will free the engineer to the extent that he can add to the throttle three or four notches while the brake-valve exhaust is discharging. Also changes in this brake valve give feed-valve pressure on top of the rotary valve with the brake-valve handle in release and running positions. Release position is used to release the brakes as this position gives full feed valve capacity whereas running position will choke down the valve capacity in order to give the conductor's valve proper control of the brake pipe. With this design, when releasing the brake valve is placed in release position 3 or 4 min. (without overcharge) and then returned to running position. This position, as above stated, will give control of the brake pipe to the conductor's valve.

The report also discussed the maintenance of freight brake equipment. It emphasized the necessity for no let-down in the standard of maintenance of the K type triple valves because they are no longer considered standard for new equipment. The condition of the K type triple valves will affect freight-train handling for several years to come. He also said that the quality of workmanship in making repairs should not be based on the permissible limit at which the valve may be returned to service, but that all railroads should follow the example set by a few and improve their repair standards to a point which will meet the exacting requirements of modern long train service. The difference in cost of making repairs which are comparable with the manufacturers' standards and those which will just pass test-rack requirements are very small in comparison to the many benefits derived.

The report was prepared by W. E. Vergan, supervisor of air brakes, Missouri-Kansas-Texas. In answering questions in the discussion, Mr. Vergan said that the modified H-6 brake valve was not intended to replace the No. 8 brake valve. He insisted, however, that if he were to apply the No. 8 valve, it would have to provide an automatic lap at 6 lb. brake-pipe reduction, just as does the first-application position in the modified H-6 brake valve as well as the feature which prevents the application of the locomotive brake in this position.

Concerning the effect on fuel of the use of the brake against the throttle, Mr. Vergan called attention to the fact that when slack developed in a freight train operating at high speed, on track which is none too smooth, the vertical bouncing of the cars tends to cause the trains to separate. He attributes the steady reduction in fuel consumption per 1,000 gross ton-miles in freight service on the M-K-T to the improvement in train handling in this respect which has eliminated many delays formerly encountered. Mr. Vergan also emphasized the importance of maintaining tight brake pipes as a feature of the successful performance with the system of brake operation described. He also pointed out that the brake valves are equipped with high-capacity feed valves.

## Brakes for High-Speed Passenger Trains

Usually a paper dealing with air brakes has concerned itself with the air-actuated mechanism, particularly its construction and principles of operation. Such a treatment of the subject was entirely pertinent in the past. But in the last few years improvements in railroad practices have changed the underlying trend in air brake development. It is no longer a matter of effecting changes so that the air-brake equipment will function more uniformly and satisfactorily, but of meeting requirements established by new demands for over-all braking performance. The elements of the air brake system which lie between the brake cylinder and the rail directly limit the retardation obtained by an application of the brakes. These elements are the rail, the wheel, the brake shoes, and the foundation brake rigging. Recent changes in railroad operating practices have emphasized the important part these elements play in securing rates of retardation.

With trains moving at high speed, unexpected conditions may arise which will necessitate a reduction of speed, or a complete stop with very little, if any warning. It is then that the highest rate of retardation possible is imperative and it is the deciding factor in the safe operation of such vehicles. The stop distance can be roughly determined if the retardation is known, and it is expressed in so many miles per hour per second, indicating the reduction in speed of the train per second. The per cent retardation obtained by action of the brakes fixes the rate of retardation. Actual tests have demonstrated that a rate of retardation in excess of three miles an hour per second is difficult to obtain even with the modern light-weight trains, unless the rail is heavily sanded and the braking power evenly distributed on all wheels in proportion to the wheel load carried.

Even distribution of braking power means that each pair of wheels must be braked to the limit, keeping in mind that if the effective retardation equals the coefficient of adhesion the wheels will slide and lengthen the stop. Car wheels can be braked to the limit, but locomotive wheels cannot with any known equipment, not even on power trucks with Diesel or electric locomotives.



This imposes an additional burden on the car-wheel brakes, which must assist to retard the weight of the locomotive in addition to that of the car.

If a stop is to be made from high speed within a reasonable distance, it is important first to get the brakes applied as quickly as possible; a train moving at 90 miles per hour is covering 132 ft. per second. It is obviously important to set up the highest possible rate of retardation while the train speed is high. All train stop records show that when the speed has been reduced by half, approximately 80 per cent of the stop distance will be covered.

The ideal brake would, therefore, be one which would develop braking power just under the factor of adhesion through a stop that could be applied within two seconds or less on all cars simultaneously. To date there are two factors which place restrictions on too rapid application; one is passenger comfort, and the other is a tendency to set up extremely high friction values if too much shoe pressure is developed while the shoes are cold. It has been proved impractical to develop over 200 per cent braking ratio in less than three seconds with standard cast-iron brake shoes.

### The Disc Type Brake

Recently a new type brake has been developed which uses automotive type brake lining on a two-face disc bolted to the inside hub of each wheel. Because of the more uniform friction values of this lining it has been found possible to apply this brake with full power in nearly half the time it can be applied with cast-iron shoes without danger of sliding the wheels. This type of brake lining has a more uniform coefficient of friction throughout a stop than a cast-iron shoe, which eliminates the necessity of reducing the brake-cylinder pressure as the speed reduces to avoid sliding the wheels. It is also capable of setting up a higher rate of retardation during the early part of the stop, which is a very valuable feature.

If the wheels are to be braked up to the limit of adhesion when the rail is in good condition it follows that this limit will be exceeded when the wheels find a low rail joint, bad crossing, or a wet spot, in which case the wheels will slide. Therefore, if braking forces are to be employed materially in excess of present conventional brake practices, a device to prevent the wheels from sliding without interfering with safe operation of the train is necessary. The values of coefficient of adhesion have been reported by various experimenters ranging all the way from 8 per cent to 10 per cent without sand on a poor rail, to as high as 40 per cent on a good rail, the average being around 25 per cent.

To reduce the stop distance the method of sanding requires considerable study. Our very best present means of sanding the rails is entirely inadequate for speeds much over 30 miles per hour. Very little sand actually gets under the wheels at the higher speeds owing to sand pipes being too far away from the wheel-rail contact; and owing to the blast of air used to blow out the sand and the wind due to the movement of the train. To sand a rail properly at high speed the sand must be delivered close to the point where the wheel meets the rail and should be delivered in a thin sheet about 1 in. wide. Several manufacturers and railroad men are said to be working on improved methods of sanding or conditioning the rails for stopping high-speed trains.

To further improve the rail condition, there is much to be done in locating steam and water traps as far away from the rail as possible, as well as controlling the dumping of water and other refuse from cars, which at present

in some instances is falling on the rail and creating a very bad condition when brakes are being applied.

Assuming that everything possible has been done to insure a good rail condition, the fact still remains that as the speed increases, the adhesion between wheels and rails decreases because of the bouncing of the wheel over the imperfect surface of the rail and because of the momentary unloading of the truck on account of the vertical oscillations of the car.

### Two Methods of Mountain Braking

[The report also described two methods of braking in handling conventional passenger trains in mountain districts. One is the graduated-release method in which retaining valves are not used and which requires frequent complete release and recharging of the brakes. In the other method retainers are used with short-cycle operation of the brakes. The report points out that the new A. A. R. standard passenger-car retaining valve, which provides for a slow, continuous blow-down and complete release of brake-cylinder pressure when the retaining valve is in operation, has eliminated many of the formerly undesirable features of this method of braking on descending grades.—Editor.]

J. A. Burke, supervisor of air brakes, Atchison, Topeka & Santa Fe, was chairman of the committee which prepared this report.

### Utilization of Locomotives

The report on this subject was prepared by a committee, of which A. A. Raymond, superintendent of fuel and locomotive performance, New York Central, was the chairman, discussed the limitations which inadequate tender fuel capacity place on long locomotive runs and suggested the methods by which these limitations can be removed. He cited a situation in which a passenger locomotive uses up the greater part of its fuel supply in 350 miles. If the coaling plant is so located that a special stop must be made, a five-minute delay would mean a waste of 1,500 lb. of fuel for the delay and to replace, say, the 727 million foot-pounds of energy lost in stopping the train from 80 miles an hour. Should the schedule be such that the extra stop cannot be permitted, to change the engine will cost 150 lb. getting to the enginehouse, 600 lb. for cleaning and banking the fire, 1,200 lb. for six hours in the house, and 750 lb. to break up the bank and place the locomotive on a train—a total of 2,700 lb. In the latter case two locomotives are required for the run.

In discussing the fueling of switching locomotives the report referred to the many outlying points from some of which the locomotives have to go as far as four or five miles for fuel. Where there are eight or ten locomotives working in the same neighborhood under such conditions, the possibility of installing a small mechanical coaling plant at a cost of about \$3,500 was suggested. In one such location where 15 locomotives were formerly handling the work, 12 locomotives were able to take care of the work after the installation of such a plant. In addition to the reduction in the number of locomotives, 10 tons less fuel was used per day, or 300 tons per month at a saving of \$900 per month.

Another solution of the problem of long runs in road service which the report discussed is the large tender. The proposed large tender would have a maximum of 75 tons of coal with 15,000 gallons of water. If it were necessary to carry 25,000 gallons of water, the coal capacity would be reduced to 33 tons. With the 75-ton

tender applied to the situation first cited in the report, replacing tenders of 15,000 gallons and 30 tons capacity which would require two coal stops en route on a 1,000-mile run, the net cost in fuel would be 2,240 lb. to haul the larger tender. This is arrived at by assuming 100 lb. of coal per 1,000 gross ton-miles of additional average tender weight, less 3,000 lb. required for two coal stops with the smaller tender.

## A Fuel-Economy Check List

J. G. Crawford, fuel engineer, C. B. & Q., presented a report on Fuel Wastes and Losses in the form of a comprehensive check list of items which should be given attention. In presenting it he said in part: "Several years ago the International Railway Fuel Association at one of its meetings concurred with the speaker that division fuel economy meetings should be conducted by the superintendent. The superintendent is a busy man and a list such as this one furnishes something which he may look over a day or two before a meeting and prepare his opening talk to cover the subjects that he did not cover during the meetings held a few months previously."

The list is classified in six main groups. These are General—including purchase, distribution and inspection; Locomotives; Stoves and Household Steam and Hot-Water Heaters; Stationary Boiler Plants, Buildings, and Construction Equipment. The Locomotive list, which is the largest, is classified under purchasing and distribution; handling of coal and fuel oil, respectively; locomotive design; locomotive maintenance; locomotive assignment; locomotive operation; terminal handling of locomotives; calling crews; timetables and dispatching; yard work; passenger-train heating and lighting; lubrication of cars; company material; repair track; loading of equipment; track, and coal and water stations. The list, as a whole, contains nearly three hundred major items, some of which are, in turn, subdivided into numerous other items which require specific attention.

## Grates and Ash Pans

The report on Grates and Ash Pans, presented by M. F. Brown, fuel supervisor, Northern Pacific, reviewed the development of the so-called pin-hole grates with a small percentage air opening, applied horizontally in the firebox, in connection with the burning of low-grade fuels on three western railroads. In the case of the Union Pacific, the report cites a locomotive built with horizontal grates of 70 sq. ft. area and 14 per cent air openings designed to burn a sub-bituminous coal of 8,800 B.t.u., 18 per cent moisture and 8 per cent ash. Older locomotives on this railroad of similar capacity had 45 to 50 sq. ft. of sloping grate with 35 to 45 per cent air openings. On the Northern Pacific the comparison was between locomotives of the same class when converted to burn low-grade fuel by replacing the sloping grate with a grate placed horizontally in the firebox and reducing the air opening from 38 to 42 per cent down to 15 per cent through the small round openings. This change in the locomotives was found to effect an improvement in the burning of the high-grade coals as well as the low-grade coals for which the conversions had been made. This simplified the extending of engine runs by making it possible to burn two or more grades of coal on the same trip.

Another advantage effected by the use of level grates with restricted air openings was the reduction in ash-pan

maintenance cost due to the smaller accumulation of burning fuel into the ash pan.

In the matter of fire cleaning, a comparison was made between locomotives with the sloping grates, which could open in only one direction and were difficult to shake, with locomotives equipped with horizontal grates. In the former locomotives the fire bed was 12 in. thick with several clinkers in the grates and 36 min. was required to knock the fire and clean the pan. In the latter locomotive the fire was 5 in. thick with no clinkers and required 11 min. to knock the fire and clean the ash pan. This comparison covered engines running over the same district burning the same kind of coal and handling the same tonnage. The former locomotive, however, burned about four tons more coal than the latter.

## Automatic Draft Control

As a result of an inquiry from the floor, B. C. Bertram of the Lehigh Valley described the automatic draft control system which has been developed and is being extensively applied on that railroad. In principle, this system drafts the locomotive to provide adequate draft for light loads and in starting trains, so that the locomotive would be over-drafted when working heavily at high speeds, except that an automatic unloading valve prevents the back pressure from rising above a predetermined maximum. With this arrangement of draft control grates with 40 per cent air opening are employed, burning egg coal. The maximum back pressure is limited to about 5 or 6 lb. The full opening of the unloading valve, which is a commercial vapor-cushioned type that is free from pounding, in effect increases the exhaust outlet from the equivalent of an 8¼-in. nozzle to the equivalent of a 10-in. nozzle. Mr. Bertram said that the draft control eliminated cinder losses.

## New Locomotive Economy Devices

The committee, of which A. G. Hoppe, assistant mechanical engineer, Chicago, Milwaukee, St. Paul & Pacific, was chairman, called attention to a proposal not yet actually applied on a locomotive to provide sufficient condensing surface to be blown by a fan, driven by an exhaust steam turbine, to condense 10 per cent of the main engine exhaust. This condensate would be returned to the tank in addition to the 12 to 14 per cent returned by the feedwater heater, making a total water reclamation of 22 to 24 per cent.

To insure that cold water may be prevented from injuring the boiler when the main throttle is shut off, the Worthington Pump & Machinery Corporation has added a spray nozzle to be used with top boiler checks which divides the feedwater entering the boiler into finely divided streams, thus reducing the shock to the boiler.

The committee recorded the fact that an installation of poppet valves has been made to a Pennsylvania K-4-s Pacific type locomotive which left the shop on August 28.

The development of a front-end stoker by the Standard Stoker Company was reported. It provides for the introduction of the coal feed in the front end of the firebox under the arch rather than in the conventional location immediately ahead of the fire door.

The research work which has been conducted by the Electro Chemical Engineering Corporation in conjunction with the Missouri Pacific to determine what takes place inside the boiler when foaming conditions develop was referred to by the committee. Following the completion of the presentation of the report by Mr. Hoppe,

(Continued on page 652)



# Master Boiler Makers' Association Annual Meeting

Twenty-sixth annual meeting at Chicago attended by over 200—  
Program included seven addresses and eight technical reports

**O**VER 200 members and guests were present when the Master Boiler Makers' Association convened for their twenty-sixth annual meeting on October 17 at the Hotel Sherman, Chicago. A brief welcoming address by President W. N. Moore started the three-day meeting which had a well-balanced program that featured addresses by men prominent in the railroad field.

The opening address of the first afternoon session was made by R. V. Wright, managing editor of *Railway Age*. He spoke of the rapid advances in design, construction, and materials which have made more difficult the problems of the master boiler maker, and of the radical modification in boiler department practices which have greatly increased their responsibilities. While marveling at the way in which the master boilermakers had met these challenges and at the type of practical and technical material brought out at their annual meetings, Mr. Wright wondered, however, whether a great amount of emphasis should not be placed upon the human problem in the boiler department. What are we doing as master boiler makers, he asked, to keep in touch with the latest developments in personnel administration and of taking advantage of the latest ideas and best practices of dealing with the workers?

Successful supervision is an art—a steadily progressing art, and the day has passed, he said, that the successful foreman can be a hard-fisted driver although there are some who have failed to recognize the passing of the old regime. He called attention to the fact that this change in attitude of supervisors, in most instances, was not brought about by sympathy for the men in the ranks, but by the fact that better results can be obtained by dealing with the human factor on a more intelligent and scientific basis.

In conclusion, Mr. Wright stated the following two-fold problem and challenge that faces the supervisors in the locomotive boiler departments: (1) To keep in step with the demands being made upon them by the improvements in boiler construction and fabrication and, (2) to take advantage of the best thought and practices in the art of supervision. Of these two, he said, the human relations problem is by no means the less important.

## Human Factor of Utmost Importance

D. S. Ellis, chief mechanical officer, Chesapeake and Ohio, addressed the meeting at the morning session of the second day. He emphasized the thought that while the interchange of technical as well as practical ideas and improvements was particularly beneficial to the membership of supervisory organizations, their ultimate value lay in their liaison position between management and workman and in their ability to help the individuals create a true spirit of mutual dependence and harmonious relationship, one with the other.

From the railroad viewpoint, Mr. Ellis told how he was impressed more each day with the fact that the success of the railroads depends on the attitude of the

men, especially those in a supervisory capacity. In order to function efficiently the various facilities of the railroads must be controlled by honest, earnest, and capable men, and assuming that the railroads are properly located and equipped, it obviously follows that the human factor is of the utmost importance in helping the railroad industry move forward in the favor of the public from which its business is derived. The accomplishment of this purpose, he told the association, is not the result of hazard but is done because supervisors have properly studied, analyzed, and planned the work so it may be pursued to completion with a minimum expenditure of effort on the part of the employee and with a minimum expense to the railroad.

## Why Not Recommend Standard Practices?

F. K. Mitchell, assistant superintendent of equipment, Cleveland, Cincinnati, Chicago and St. Louis, in an address, reviewed the history and accomplishments of the association and made suggestions as to how it might become more useful and more nearly accomplish its ideals. He referred to a study of the proceedings of any of the annual meetings which contain fine papers on many important subjects, but that these represented the opinions, ideas and thoughts of individuals and not of the association.

An outline of how the association might set up recommended standards of practice for boiler construction and maintenance through the services of a full-time secretary and clerical force and the means by which the expense of this work could be met by the association was given by Mr. Mitchell. He stated that a good which is worth accomplishing is worth making permanent.

## Don't Sacrifice Safety for Progress

The address of J. M. Hall, chief inspector, Bureau of Locomotive Inspection, Interstate Commerce Commission, featured the program for the third day. He cited the benefits resulting from the work of the bureau, and discussed the assistance that has been and can be given by the members of the association to the bureau. Every generation has its own interpretation of progress but, he contended, the desire to progress does not permit us to cut corners in the matter of safety. He said that there is danger in brushing aside things that have been proved in the past to be good and fundamental; and seeking to adopt new, and in many cases, untried ideas without need or justification.

Mr. Hall called attention to the fact that economical repairs, or repairs which are substantial and cost more money at the time they are made, are low-cost repairs in the long run because they are lasting and pay a dividend in the form of superior performance, while inferior repairs result in consistently poor performances and are a continual source of expense and danger. He requested the association to sponsor only the best practices rather than

those of debatable value. He concluded by saying that an important part of the work of the members of association was the training of younger men, who will take their places as supervisors, to be proficient as boiler makers and to uphold the best traditions of the boiler making craft.

#### Other Addresses and Committee Reports

Other addresses and committee reports were as follows: Address by R. C. Bardwell, superintendent of water supply, Chesapeake and Ohio; Lecture on "Causes and Prevention of Embrittlement in Locomotive Boilers" by Dr. W. C. Schroeder, senior chemical engineer, United States Department of Interior, Bureau of Mines; A paper on apprenticeship by M. M. Hanson, principal field representative, United States Department of Labor, Federal Committee on Apprenticeship; Lecture and showing of motion pictures on "Circulation of Water in the Locomotive Boiler" by C. M. Rogers, Locomotive Firebox Company; Report on Topic No. 1, Recommendations to Assure the Development of Better Boiler Maker Apprentices, Chairman, A. T. Hunter, assistant general boiler inspector, Atchison, Topeka & Santa Fe; Report on Topic No. 2, Advantages and Disadvantages of All-Welded Construction and Alloy Steel for Locomotive Cisterns, Chairman, L. C. Ruber, superintendent of boiler department, Baldwin Locomotive Works; Report on Topic No. 3, Suggestions to Improve Circulation and Other Conditions to Improve Steaming Qualities and to Eliminate Leaking Staybolts and Cracking of Firebox Sheets, Chairman, C. A. Harper, general boiler inspector, Cleveland, Cincinnati, Chicago and St. Louis; Report on Topic No. 4, Treating Boiler Feedwater Chemically, Chairman, C. W. Buffington, general master boiler maker, Chesapeake and Ohio; Report on Topic No. 5, What Standard Practice Can This Association Recommend for Locating the Height of Crown Sheet, Water Glass, Gage Cocks, Low Water Alarm Drop Pipe, and for Marking Water Level and Highest Point of Crown Sheet on Boiler Head, Chairman, E. H. Gilley, general boiler foreman, Grand Trunk Western; Report on Topic No. 6, What is the Real Cause for Flues Cracking Longitudinally Through Beads and What Can Be Done to Eliminate That Cracking, Chairman, E. E. Owens, general boiler inspector, Union Pacific; Report on Topic No. 7, Recommendations to Standardize the Inspection, Testing, and Cleaning of Locomotive Air Reservoirs, Chairman, L. R. Haase, district boiler inspector, Baltimore and Ohio; Report on Topic No. 8, Method Recommended for the Renewing of Fireboxes, Chairman, F. A. Longo, welding and boiler supervisor, Southern Pacific.

#### New Association Officers

The new officers elected were: President, C. A. Harper, general boiler inspector, Cleveland, Cincinnati, Chicago and St. Louis; secretary-treasurer, A. F. Stiglmeier, general boiler foreman, New York Central; and executive board members; E. E. Owens, general boiler inspector, Union Pacific; F. A. Longo, welding and boiler supervisors, Southern Pacific; B. C. King, general boiler inspector, Northern Pacific, and R. W. Barrett, general boiler foreman, Canadian National. The following officers continued as members of the executive board: C. W. Buffington, general master boiler maker, Chesapeake and Ohio; M. C. France, general boiler foreman, Chicago, St. Paul, Minneapolis and Omaha; L. R. Haase, district boiler inspector, Baltimore and Ohio; E. C. Umlauf, supervisor of boilers, Erie R. R., and C. J. Klein, locomotive inspector, Interstate Commerce Commission.

## Problems of Locomotive Operation Discussed at Chicago

(Continued from page 650)

a moving picture showing the action of the water surface inside the boiler taken through windows in the dome was presented. These pictures show rapid forward movement of the water surface and, under foaming conditions, the tendency of the water level to rise, the water below the surface assuming a more or less tenacious spongy consistency. The interpretation of the observations which have been made in this study is that water is carried over into the dry pipe by the whipping action of the steam, which results from the reduction in the area through which the steam must pass over the top of the liquid when the surface rises in the manner indicated. The reduction in steam-passage area over the top of the water increases the velocity and, therefore, the amount of water picked up. The importance of reducing obstructions to permit free flow of steam above the water surface was pointed out.

The moving pictures also showed the action of a trough installed by the Electro Chemical Engineering Corporation into which the surface water spills when the level rises under foaming conditions which tends to skim off surface impurities as blown off from the boiler.

In the discussion of another report, a representative of the Baltimore & Ohio referred to the front-end stoker already mentioned in this report, the development work on which has been done on that road. He said that stokers for 50 locomotives have already been bought for the B. & O. and several for the Alton. This stoker, he said, had been developed primarily to reduce stack losses and that it shows a cinder loss 30 per cent less than other stokers and burns 14 per cent less coal per 1,000 gross ton-miles.

## To Be Avoided in Locomotive Design

In his paper F. P. Roesch, vice-president, Standard Stoker Company, dwelt on certain features of the combustion equipment of the steam locomotive which are susceptible of improvement. He stressed the importance of adequate air openings into the ash pan to prevent the formation of a vacuum in the pan. He cited a case in which the correction of such a condition recently permitted an increase of  $\frac{1}{2}$  in. in the nozzle diameter of several locomotives, effecting a substantial saving in fuel and greatly increasing the efficiency of the locomotives.

In discussing the front end he referred to University of Illinois Bulletins Nos. 256—A Study of the Locomotive Front End, Including Tests of a Front-End Model, and 274—A Supplementary Study of the Locomotive Front End by Means of Tests on a Front-End Model—issued, respectively, on May 30, 1933, and May 21, 1935, as a source of explanation of the function of the front end in producing draft.

With respect to the Master Mechanics' front end with which a large number of locomotives are equipped, he suggested that the recommendations of the Committee on the Revision of the Master Mechanics' front-end arrangement, submitted to the Mechanical Division of the A. A. R. in 1936, be followed. In this connection he pointed out the necessity for internal streamlining to avoid obstructions to the flow of gases through the front end. The removal from the front end of the exhaust-steam-supply pipes leading to feedwater heaters and exhaust-steam injectors should, he said, present no difficulties in new locomotives.



# Bridge and Building Men Study

## Many Problems at Chicago

Seek answers to changed conditions in the interest of efficiency and economy —  
See constructive exhibit of materials and equipment\*

### Part 1



Each Bridge, Large or Small, Presents Special Problems

**C**ONFRONTED with many new and difficult problems as the result of prolonged reduced earnings, higher train speeds, and, more recently, largely increased traffic, the American Railway Bridge and Building Association presented a most intensive program at its forty-sixth annual convention at the Hotel Stevens, Chicago, on October 17-19, in the interest of finding the most effective and economical solutions to these problems. One hundred seventy-five bridge, building and water service men from all parts of the country were in attendance at the convention, which was opened with an address of welcome by C. E. Johnston, chairman, Western Association of Railway Executives, and with greetings from both the American Railway Engineering Association and the Roadmasters and Maintenance of Way Association.

At the various sessions of the meeting, all of which were presided over by President Armstrong Chinn, chief engineer of the Alton, eight committee reports and three technical addresses were presented, covering important current problems confronting bridge and building men. The addresses were by J. F. Leonard, engineer, bridges and buildings, Central region, Pennsylvania, who spoke on Maintaining Old Masonry; by G. A. Haggander, assistant chief engineer, Chicago, Burlington & Quincy, on The Strengthening of Old Bridges to Meet the Demands of Today's Traffic; and by A. T. Hawk, engineer of buildings, Chicago, Rock Island & Pacific, on Meeting Today's Requirements in Railway Structures. Com-

mittee reports were presented on The Maintenance of Shop and Enginehouse Roofs; Deteriorated Concrete—Causes, Detection and Methods of Repairs; Bridge Painting Problems Resulting From Deferred Maintenance; Glazing Maintenance in Shops and Enginehouses; Preframing Treated Timber for Replacement Purposes; Pumping Equipment to Meet Today's Requirements; The Elimination of Slow Orders in Connection With Bridge Repair and Renewal; and Present-Day Methods of Safeguarding Bridge Structures.

Special features of the program included an evening of motion pictures on Tuesday at which the film entitled *Trees and Men*, portraying logging and lumbering operations, was presented through the courtesy of the Weyerhaeuser Sales Company; the annual luncheon on Wednesday, where more than 200 members and guests were addressed by Samuel O. Dunn, editor of the *Railway Age*; the annual joint dinner on Wednesday night with members of the Bridge and Building Supply Men's Association, which was attended by 190; and a trip on Thursday through the paint manufacturing plant of the Sherwin-Williams Company at Kensington, Ill.

In conjunction with the convention, the Bridge and Building Supply Men's Association presented an interesting and constructive exhibit of a wide range of materials, equipment and appliances employed in the construction and maintenance of bridges, buildings, water service and other railway facilities. Thirty-one member companies exhibited, including six companies which were exhibiting for the first time.

In the election of officers for the ensuing year, A. E.

\* A list of the companies participating in this exhibit, with the names of their representatives and the products on display, appears in the news pages of this issue.

Bechtelheimer, assistant bridge engineer, Chicago & North Western, Chicago, was advanced from second vice-president to president; F. H. Cramer, bridge engineer, Chicago, Burlington & Quincy, was re-elected first vice-president; H. M. Church, general supervisor bridges and buildings, Chesapeake & Ohio, Richmond, Va., was advanced from third vice-president to second vice-president; R. E. Dove, assistant engineer, Chicago, Milwaukee, St. Paul & Pacific, Chicago, from fourth vice-president to third vice-president; and F. H. Soothill, chief estimator, Illinois Central, was elected fourth vice-president to succeed Mr. Dove. C. A. Lichty was re-elected secretary-treasurer, and L. G. Byrd, supervisor bridges and buildings, Missouri Pacific; K. L. Miner, supervisor bridges and buildings, New York Central; and A. M. Knowles, assistant engineer structures, Erie, were elected directors.

The secretary's report showed 573 active members of the association in good standing and 48 new members taken in during the year. Chicago was selected as the convention city for 1940.

Abstracts of the addresses by Messrs. Johnston, Dunn and Leonard, and the reports of three committees follow. Abstracts of the other addresses and reports will appear in the issue for next week.

## C. E. Johnston Opens Convention

Speaking for the presidents of the western railroads, C. E. Johnston, chairman of the Western Association of Railway Executives, welcomed the convention to Chicago, and called upon those present to give their best in solving the large problems which confront the railways. Pointing to unsettled world conditions and the important part which the railways of this country must play in the event that we become involved in war, Mr. Johnston asked, "Could we, in your judgment, entrust this big job to our competing forms of transportation?" Supplying his own answer he said that we all know that only the railroads are adequate to this task, but, he continued, we must realize that no high standard of railroad maintenance and operation can be provided without complete and intelligent interest on the part of all those engaged in railway work.

After reviewing the development of the railways and the important part which they have played in the growth and well-being of the country, Mr. Johnston spoke of the still greater need for the railways at the present time and said, "No further proof of this is required than for you to imagine the chaos which would exist if railroad service were 'blacked out' for a month, a week, or even a day."

With the improvements that are being made in both passenger and freight service, Mr. Johnston saw a lessened threat by other competing forms of transportation, on the highways and waterways, and in the air. But he decried the unfair advantages possessed by these competing means of transportation in the form of subsidies, inequitable taxation and regulation, and demanded equal opportunity for the railways and that present discrimination be corrected. "These unfair advantages enjoyed by other forms of transportation," he said, "can be removed only by an informed and intelligent public opinion, recognizing that all agencies of transportation should and must pay their own way." Summing up his remarks, Mr. Johnston said:

"The railroad industry is not dead; the railroad industry is not dying; the railroad industry is ready, willing and able to march forward with America to new and even greater achievements. The commanding posi-

tion occupied by the railroads as a privately-owned and operated industry should cause us, as a part of this industry, a feeling of pride so great as to leave no room or reason whatsoever for a feeling of discouragement. If we who are engaged in this industry make a properly organized effort, if we show real fortitude, if we counter the attacks of demagogues, we can make ourselves a real factor in framing public policies that will correct some of the evils that now prove so burdensome to the railways."

## Others Extend Greetings

Bringing greetings from the American Railway Engineering Association, E. M. Hastings, its president, and chief engineer of the Richmond, Fredericksburg & Potomac, spoke of the large place filled by the Bridge and Building Association in the adequate maintenance of the railways, the desirable trend away from the too rigid curtailment of maintenance expenditures, and the need for diligence and determination in facing the large problems of the future. "I have a very intimate knowledge," he said, "of the difficulties with which bridge and building men have been faced in recent years. Too often it has been the practice to treat our railway structures much as a red-headed stepchild. Economy or the saving in money that is made by a reduction or curtailment in the maintenance of bridges and buildings is one that is not lasting; for the moment a few dollars may be saved, but in the long run we generally find that more dollars are spent. I believe that there is a very definite trend away from the curtailment in the maintenance of bridges and buildings and that the importance of proper maintenance is being more fully recognized today than ever before. If this is true, then the opportunity that is open to the members of your association is a very challenging one, and one that will require the very best that you can give."

"We are living these days in a disturbed world. War and confusion are on almost every side. Therefore, we men who must help guide the railway industry aright, need to keep our thinking clear, our motives honest and our dealings fair—solving our railway problems with the welfare of the whole industry foremost, and, while looking backward with just pride and satisfaction on the accomplishments of the past, press forward determined to perform greater service for our industry in the future."

In extending greetings to the convention from the Roadmasters and Maintenance of Way Association, G. L. Sitton, its president, and chief engineer maintenance of way and structures of the Eastern lines of the Southern, expressed his high regard for the work of the bridge and building association over the years, and said that he liked to associate with men who enjoy their work and who are never satisfied with their present store of knowledge. Looking to the future, Mr. Sitton saw rapidly changing times and conditions ahead and spoke of the value in such times of the close co-operation which has always existed between bridge and building men and those in the track department. In this regard, he said in part as follows:

"There never was a time in our lives when we needed to know so much about so many things, as we do today. We are living in an age of rapid changes. Practices and materials that were satisfactory only a few years ago are now being discarded as out of date. Railroad maintenance men must keep awake, must look ahead, and must learn about up-to-date methods in order to meet the challenge of these times. How well your organization is undertaking to keep up-to-date is evi-



denced clearly in the program of your convention, with eight committee reports, all on strictly up-to-date subjects.

"The Roadmasters and Maintenance of Way Association and your association have worked hand in hand through many years, and on individual roads, the two departments which they represent have worked side by side in a common cause, namely, to maintain the physical properties of the railways to as high a standard as is humanly possible with the funds available. I am sure that no other departments on the railways were ever more closely related, or realized more fully the dependence of one on the other. Truly, we know the meaning of the word co-operation."

#### President's Address

In his presidential address, President Chinn compared the large accomplishments of the association in recent years with those of the early days of its activities, beginning in 1891, but he saw still larger opportunities for constructive work in the days ahead. Concerning the railway situation today, the importance of the railways in the economic and national defense systems of the country, and the part that must be played by bridge and building men, Mr. Chinn said, in part, as follows:

"Today we are again entering a period of uncertainty and world unrest. A war between great nations in Europe is under way and where it may lead no one knows, but its effects are already being felt in our country and the extent to which we may become involved is uppermost in the public mind. But no matter what the final outcome of this conflict may be, it is certain that we will still have much work on our railroads to attend to, the extent and importance of which will be in proportion to the national emergency which arises. That this is true is nowhere better evidenced than in recent trends in Europe, where one of the first activities of a warring nation in its efforts to cripple an enemy has been the destruction of its systems of transportation.

"Transportation is probably the most valuable and useful commodity in our country, for on it depends our national prosperity, unity and strength, our conveniences and comforts of life, our health and our way of living. Take our transportation from us and we would disintegrate economically, socially and nationally. The railroads have been accused many times of being backward, of having little or no initiative and of failing to develop and to keep abreast of the general advance of our modern age. The work of our association here is an evidence to the contrary, and shows that the railroads do have initiative and are making advances, and our association is only one of several that are devoting their time and energy to the advancement of the science of railroading. The part that bridge and building men have had in this progress can be found readily in a comparison of early railroad bridges and buildings with those of the present day.

"But, you may say that the days of railroad expansion are over and that our problem is now to maintain what we have. This is true to a certain extent, but we must also constantly improve what we have if we are to meet competition and stay in business. At the same time, while we are making these improvements, we must not lose sight of the importance of maintaining the property we have. No matter how well a structure may be built, it is of no value unless it is used, and the more it is used the more maintenance it will require. The field of railroading is wide open to men with imagination and with alert, inquisitive and studious minds.

American foresight, energy and efficiency created and built our railroads. The same foresight, energy and efficiency will keep them running."

### Many Domestic Problems Still to be Solved Says S. O. Dunn

Speaking before the annual luncheon on Wednesday, Samuel O. Dunn, editor of the *Railway Age*, saw economic conditions of the country showing some improvement, with larger than seasonal increases in railway car loadings, but warned that there are many domestic economic problems still to be solved, and cautioned that the people of this country must not permit these to be pushed into the background or to be distorted or complicated by further government interference with business, on the pretext that such is necessary to meet world conditions or to prepare us for a national emergency. He said in part, as follows:

"We meet in one of the most tragic periods in the history of the world. The recent beginning of the war in Europe makes it difficult for us to keep our minds on and to consider any of our domestic problems without reference to the possible effects of the war. In regard to this situation, I have three very positive opinions:

"First, that it is foolish to say, as some do, that we cannot keep out of this war; second, that we should spare no effort or expenditure which may be necessary to put our country in a condition to defend itself against any other nation or combination of nations; and third, and one which I want to emphasize, that I consider one of the greatest dangers with which we are confronted to be that we will allow the war and its effects to divert our attention from our own great domestic problems, which include, of course, our railroad problem. We cannot possibly make any greater mistake than that of allowing our attention to be diverted by what is going on elsewhere from the consideration and solution of these great domestic problems of our own.

"We have been and still are economically in a bad condition in this country. The necessity of facing and really solving these economic problems of increasing our production and our national income is essential, not only to our prosperity, but also to insure that in case we become involved in a war, we will be prepared economically for it. And economic preparedness is quite as essential to a nation as military preparedness. In my opinion, the only way that we can prepare ourselves economically either for peace or for war is by adopting those policies which are necessary to restore our production and our national income. As regards our railroads, this means that it is necessary to so equip them as to make sure that they will be able to meet any traffic demands that may be made upon them either by increases in business without our participation in war, or by increases in business due to our entrance into war.

"Regardless of the war situation and the so-called emergency, we should not only guard against increasing government interference with various kinds of business, but should exert the utmost pressure of which we are capable to reduce government in business, because the prosperity of a country is created by free private enterprise. The great danger is that when there is so much talk about us becoming involved in war, the public may become more disposed rather than less disposed to increase the power of politicians.

"If we get into a war, there will be plenty of increase in government. That is my principal reason for believing that we should do our utmost to keep out of war, and why I emphasize that it is the duty of every one of us

as citizens to do our utmost to keep public minds, as far as possible, concentrated on our domestic problems and especially on our domestic economic problems, resisting all efforts by government to increase government interference with business upon the pretext that it is necessary to help prepare us for war; because it isn't necessary and it is the exact opposite of necessary. What is necessary economically to prepare us for war is to put our industries in the best and most prosperous condition possible. And that means giving private enterprise the greatest possible opportunity to do its work of rehabilitating our industries, and thus restore prosperity.

## Maintaining Old Masonry

By J. F. Leonard\*

To some engineers and to a considerable number of railroad officers, this subject will seem a paradox and, therefore, completely inappropriate. They have been taught that masonry is permanent. My task is to try to prove that this is incorrect. Webster's dictionary defines "Permanent" as "The quality of being permanent, enduring or fixed perpetualness—as nothing material has permanence." From this definition, it is evident that masonry cannot be permanent in the true sense of the word, and I think most of us know from experience that this is so. But as the result of the way the word permanent has attached itself to the term masonry, we railroad engineers find ourselves constantly being put on the defensive when we try to obtain proper budget authority for the maintenance of masonry structures.

Masonry is not a real monolith, but rather is composed of two parts—the dimension stone and the mortar. Even if the stone has remained in good condition, the mortar often breaks down. Furthermore, masonry structures are elastic, and the constant repetition of strains tends to break down and cause working at the joints between the stone and mortar. Another source of our trouble today is the common construction practice of earlier years of using dimension stone for the face only. In the case of arches and walls (and I think of bridge abutments as walls) rubble stone, with or without mortar, was used for backing, and in the case of piers, the core was sometimes of rubble and sometimes of spalls. As a result, the core provided a place for water to collect, with an endless cycle of freezing and thawing in cold climates.

In the past we have inspected masonry structures conscientiously at regular intervals and have pointed the joints, but this has not been an effective cure. If conditions get bad enough, we go in with "crutches" for a while, but finally give up and replace the structure. We will have to continue to do this in some cases in the future, but the poor old railroad pocket book is so lean that the financial strain of this practice is severe. There has now developed a school of thought which suggests remedial treatments of not too great expense, which we hope will prolong the life of these old structures very materially. One of these is to install a positive drainage system. Failing this, there are schemes which cut in drainage pipe to carry the water away. In the case of retaining walls and the backwalls of abutments, drain pipes or open ditches at the tops will catch the surface water, and sometimes that will suffice. In the case of arch bridges of the closed spandrel type, longitudinal and intercepting drains have been installed at the subgrade level to carry away the surface water.

We have today many old masonry structures where

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the mortar is badly disintegrated. The only method of which I know to restore joint mortar adequately and thus produce again a monolith of the masonry is by pressure grouting. Where a large amount of grout is required, pneumatic apparatus is generally adopted as it permits the mixing of the sand with the cement in the gun. In some cases an admixture is used as a waterproofing agent, or to obtain better penetration, or both.

In some cases the arch stones themselves have become badly weathered on their faces, deep spalls have fallen out, and the entire structure has become weak. Where failure has progressed this far, various methods of lining have been attempted. The oldest and most common practice has been to build forms under the arch and to deposit a new ring of concrete about two feet thick, cutting a shoulder for it to rest on, or setting it on one of the old footing offsets. More recently, steel liner plates, instead of wood forms, have been used in arch strengthening work and have the advantage of considerable arch strength in themselves. Where these plates are used, the backing is generally of grout, but recently, substantially reinforced shotcrete, gunite or pneumatically projected mortar have been used. By "substantially reinforced," I mean a balanced design of reinforcing to produce real strength.

What has been said with regard to masonry arches applies equally well to retaining walls, abutments and stone-lined tunnels, except that any extraneous lining is not needed or should be handled in a different fashion. In the case of tunnels, the problem is much more complicated than in the case of simple arches. For pier masonry, in general, the problem of solidification, so far as the shaft is concerned, is essentially one of straight pressure grouting.

Many difficulties have, of course, developed in the behavior of footings and their supports. Each one of these is a particular problem in itself. There has, however, been considerable progress in the consolidation of footings and foundations by means of pressure grouting.

## Elimination of Slow Orders While Making Bridge Repairs

The findings of this committee, of which H. B. Christianson, division engineer, Chicago, Milwaukee, St. Paul & Pacific, was chairman, indicate that changes in bridge maintenance methods to eliminate slow orders have consisted principally of the building of falsework of adequate strength to take care safely of the heaviest traffic moving at normal speed; taking greater care to maintain proper surface and line for high-speed traffic; taking full advantage of improved types of power tools and equipment; perfecting established methods of bridge maintenance and best adapting them to the train schedules and operating conditions that exist; and working in closer co-operation with operating officers than ever before.

The committee recognized that marked progress has been made already in the reduction of slow orders and felt that further progress will be made in the future, but cautioned that it must be recognized that any work which renders a structure unsafe for train operation demands flagging protection, and that the reduction or elimination of slow orders with a sacrifice of safety cannot be countenanced. Any tendency on the part of a foreman to disregard this first rule of railroad operation, it said, must be corrected promptly and decisively.

According to the committee, train orders that are issued for protection because of bridge work may be divided between those which effect a reduction of train



speed over a bridge that is not considered safe for traffic at normal speed (such a location must be further protected with fixed signals), and those for the protection of impassable track, in which case qualified flagmen with prescribed flagging equipment must be stationed to insure observance of the order. Slow orders under these two general classifications, it said, may be eliminated by (a) the spending of the necessary amount of money to construct falsework of adequate strength to permit the passage of trains at normal speed and, (b) by maintaining line and surface conditions suitable for normal speeds at all times, making corrections immediately throughout the work whenever the track becomes unfit for such speeds.

Whenever work is in progress that calls for adjustment of the track over a bridge, the committee cautioned that the closest co-operation between track and bridge forces is indispensable, and pointed out that the division engineer can be very helpful in this regard by advising the track supervisors of all bridge work that is planned which might require the assistance of the track forces.

In the main body of its report, the committee discussed various methods which are being employed to reduce train delays by reason of impassable track in connection with bridge repairs and renewals. The first of these, it said, was by diverting traffic to another track in multiple-track territory, a method which expedites carrying out the bridge work, but which calls for the provision of temporary crossovers where none are already available, and invariably requires speed restrictions. To accomplish the best results by this method, it said, requires that the supervisor work closely with the superintendent and the dispatcher and secure their co-operation.

The second method pointed out was that of building a run-around or "shoo-fly" to carry traffic while the regular track is out of service because of repair or construction. This method, it pointed out, invariably involves speed restrictions over the turnouts constructed, and frequently the construction of a temporary bridge and the relocation of automatic signals, all of which make it costly, and warranted, therefore, only in the case of large jobs on lines carrying very important traffic.

Still another method to which the committee directed attention was that of making bridge repairs and renewals under traffic, doing the work that renders the track unsafe between the time of trains. Under this method, it said that the work must be done only under full flag protection, the flagman being called in when the track is restored to service for full-speed operation, and cautioned that under such conditions much time can be lost needlessly and trains delayed unless there is an effective and absolutely safe means of communication for flagging. In the category of means of minimizing delays where the track is impassable between trains, the committee also discussed in some detail the effective use which is being made of power tools and improved equipment, including off-track types of equipment.

In concluding its report, the committee said as follows: "The necessity for keeping passenger and time-freight trains on time by avoiding delays has brought about much closer co-operation between operating and maintenance men. Frequently there are trains that the superintendent and train dispatcher can set back or reschedule, and thereby expedite the work at the bridge and reduce or eliminate delays to other more important trains. It is clear that the planning cannot be confined to that done on the job alone if a successful campaign to eliminate slow orders is to be carried out. Every-

body, from the bridge engineer and superintendent down to the men who are doing the actual work, must plan together, and the man who schedules the time allotted to the foreman for work on structures in high-speed territories must give consideration to the conditions surrounding the work."

### Discussion

The discussion following this report emphasized the need of keeping speed restrictions to the minimum, because of the higher train speeds of today. The desirability of allowing the maximum safe speed when placing slow orders was conceded, but several members stated that if this practice is followed, trainmen must be impressed with the necessity for strict observance of such orders and violations of speed restrictions must be reported.

### Deteriorated Concrete—Causes, Detection and Methods of Repair

According to a committee of which S. T. Corey, assistant bridge engineer, Chicago, Rock Island & Pacific, was chairman, poor materials, poor workmanship, or faulty details of design and construction have caused much deterioration of concrete and have presented many difficult problems of repair. In connection with the construction of concrete structures, the committee deplored the lack of detailed construction records. If less attention were paid to costs, it said, and more to recording the kinds and sources of materials the methods employed in mixing and placing, where the water was obtained, soil conditions, kind of waterproofing and other important data, the cause or causes of deterioration could be determined with accuracy and, what is more important, a repetition of the failure could be avoided in other structures which may be built in the same locality.

Of the various causes of deterioration of concrete, the committee gave particular attention to occluded water and low temperature, stressing the fact that water in concrete, under low temperatures, sets up expansive forces reaching 12,000 lb. per sq. in. at 20 deg. F., and 30,000 lb. per sq. in. at -8 deg. F. When the surrounding concrete is no longer able to withstand the rapidly mounting pressure, the latter is released, it said, and the water, changing to ice with explosive force, disrupts large masses from the surface. To keep water out of concrete, especially from entering under pressure on the back sides of structures, the committee recommended adequate drainage and effective waterproofing, because, aside from damage due to freezing, it pointed out that much damage can result from percolation.

On the premise that proper diagnosis is imperative for the successful treatment of deteriorated concrete, the committee recommended various methods of inspecting concrete by probing and sounding and then discussed in some detail different methods which have been used, successfully or otherwise, in repairing faulty concrete. In this latter regard, it said, in part as follows:

"Many concrete walls and other structures show surface defects which, if neglected, may result in serious damage if not repaired. Such deterioration has been halted and, in many instances, entirely overcome by various surface treatments. Asphalt and cement paints have been found useful, but as a class have a rather limited field and a relatively short life. Oil paints often saponify and surfaces coated with them must be re-

painted occasionally. Other types of surface treatments consist of numerous mixtures of iron treated with sal ammoniac, or of emulsions of asphalt. Transparent waterproofings, consisting of various materials dissolved in volatile solvents are of little value. Numerous successful applications of iron treatments are on record, but there have been many failures as well.

"Asphalt dissolved in a petroleum solvent, commonly known as a "cutback," asphalt emulsions, or pure asphalt heated to the proper consistency, may be used when the conditions warrant. Asphalt coatings are effective if used between the surface to be waterproofed and the source of the moisture. If the surface is under pressure from behind, the effectiveness of this type of waterproofing is greatly reduced.

"The waterproofing of construction joints and structural cracks, particularly where water pressure is high, is exceedingly difficult. If the concrete is not subject to freezing temperatures and the joints are narrow, they may be calked, using oakum, and sealed over with either cement mortar or asphalt and cement mortar. Cement mortar should not be used if there is structural movement. If the joint or crack is exposed to freezing temperatures, it is imperative to prevent water from getting into it."

In those cases where it becomes necessary to patch or repair small areas with new concrete or cement mortar, the committee stressed the importance of proper preparation of the old surface and of overcoming the tendency of the new patch material to shrink. Where large areas are involved, requiring a large volume of new cement mortar or concrete, the committee thought it essential to employ either the pneumatic process of repair or the more usual method of packing in concrete behind forms. It cautioned that restoration by the pneumatic process requires expert knowledge and the most skilled workmanship. With regard to reinforcing employed in restoration work, it said that whether this consists of mesh or bars, or both, it should be fastened securely to dowels or anchor bolts and located not less than 1 in. from the surface of any concrete that will be subjected to exposure.

### Discussion

Accepting that portion of the report dealing with methods of waterproofing concrete, the discussion dealt largely with the desirability of waterproofing concrete before deterioration resulting from the presence of water can develop. The deterioration of concrete exposed to streams containing concentration of salts was discussed and it was mentioned that such deterioration is most rapid in streams in which the salt concentration fluctuates greatly. Cleaning old concrete with a dilute solution of muriatic acid to provide a good bond with the new repair concrete was also discussed, and it was agreed that this method should not be used with concrete containing limestone aggregates but that it can be employed successfully with concrete containing silicious aggregates if the concrete is washed thoroughly to free it of acid before the new concrete is placed.

## Pumping Equipment to Meet Today's Requirements

A committee of which M. P. Walden, assistant supervisor of bridges and buildings on the Louisville & Nashville, was chairman, reviewed the many changes which have been brought about in railway water service in recent years as the result of changes in train operation,

and then discussed the factors and problems which must be taken into consideration by water service men in providing adequate and efficient water service facilities to meet present-day demands. In analyzing the problems presented at any specific water station, the committee pointed out that the paramount questions to be answered, particularly with regard to selecting the most economical and efficient pumping equipment, are the water supply, the power sources available, and the demand for water. In determining the capacity of any plant, it cautioned that it is important to provide adequate capacity for probable increased demand and to compensate for the decreased efficiency of the plant with service and wear.

With regard to the source of power at water stations, the committee recommended that all of the various forms—electricity, gasoline, fuel oil and steam—be given consideration in the light of their availability, cost and other special considerations at any particular point. It saw many advantages in those types of power units other than steam, both for automatic and manually-operated pumping plants, but said that cheap fuel and convenient handling at many points justify the use of steam pumping plants, especially where there is joint operation of two stations, or where it is possible to give the pumper other duties to reduce the labor item of operating costs.

The committee spoke with particular favor of electrically-driven centrifugal pumps (the turbine-type for wells and the horizontal type for surface water), stating that many installations of this type of equipment are producing better results than reciprocating-type pumps, and are effecting considerable savings in operating costs. One road, it said, which replaced steam plants with electric plants at three of its large pumping stations, reported that at one of these points the total operating and repair costs of its old steam plant for one year were \$8,244, as compared with a total cost of only \$1,980 a year for the automatic plant which replaced it—a net annual saving of \$6,264. At a second station, the annual operating cost of the old steam plant was \$3,075.95, as compared with a total cost of only \$630 for the automatic electric plant which replaced it, an annual saving of \$2,445.95. At the third station, the annual operating cost of \$2,715.32 for the steam plant was cut to \$680 for the automatic electric plant, effecting an annual net saving of \$2,035.32. The replacement of the steam pumps and boilers at these three stations by automatic electric-driven pumps, the committee said, is typical of many improved plants to be found on various railways, and illustrates the savings that can be made by the substitution of modern, efficient pumping equipment for older equipment which has become obsolete.

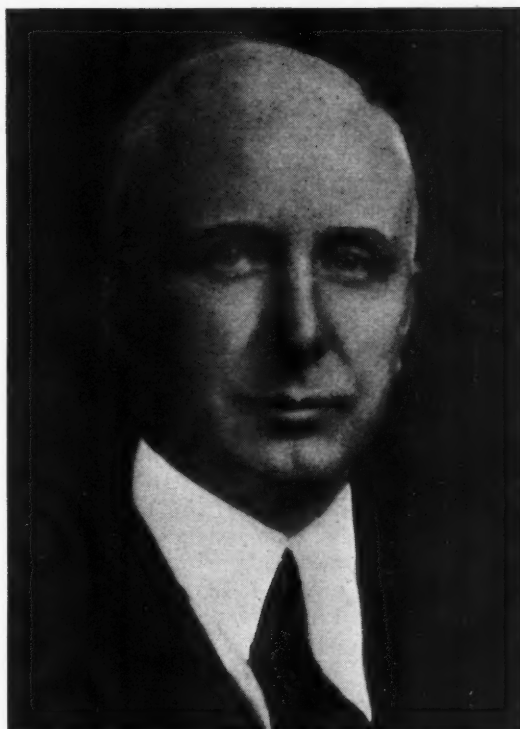
At another point in its report, the committee cited an example of an existing water station, with steam pumping equipment, as an indication of the possibilities still available for improving water service and reducing water costs, and estimated that if this plant was modernized to incorporate automatically-operated electric equipment, its present operating and maintenance costs could be reduced one-half. Further, with regard to equipment, the committee said that from the information made available to it, it is evident that the trend in equipment is toward the use of semi-Diesel engines and electrically-driven horizontal centrifugal, vertical centrifugal, or deep-well turbine pumps, which types operate successfully and economically against heads as great as 400 ft.

In closing its report, the committee, to show the importance of water service on the railways, quoted statistics compiled by the Interstate Commerce Commission with regard to expenditures made by the Class I rail-  
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# R. E. Woodruff to Head Erie

Has spent entire railway  
career of 34 years in the  
maintenance of way and  
operating departments  
of this road



Robert E. Woodruff

**R**OBERT E. WOODRUFF, operating vice-president of the Erie, was named co-trustee and chief operating officer of this road by the district court on October 18, the selection being subject to the approval of the Interstate Commerce Commission. It is expected that he will later be elected president by the board of directors. He succeeds Charles E. Denney, who resigned to become president of the Northern Pacific.

Mr. Woodruff's election brings to a climax a career that has many of the characteristics of the story book. Starting as a laborer in a section gang, he rose steadily step by step until after 34 years, all with the one road, he now becomes its chief executive.

Mr. Woodruff is a man of many interests, paramount among which are people and organization. He has been especially active in his study of the younger men on his railway, who, largely unknown to them, have been the object of careful observation and record, looking to the discovery of latent talent and to providing the maximum opportunity for men of ability and ambition. As a result, he has built around him an exceptionally efficient staff of assistants. The railroad of which he is now chief executive has become, because of its strategic position in the Van Sweringen system, an increasingly strong competitor of other eastern railroads.

The present company was incorporated in 1895 to succeed to the properties of the New York, Lake Erie & Western that were sold under foreclosure. During the years prior to 1920 it struggled against the handicaps of a relatively poor physical condition, low credit standing, and an excessive burden of fixed charges, although since that time it has undergone extensive physical rehabilitation and its earning power has been strengthened.

In the early days of the present company the road was able to meet its fixed charges, although with difficulty. The years from 1923 to 1930 were the most prosperous, and in each of these years it had a surplus of from 2 to 10 million dollars. Since the latter year its difficulties have increased, with the result that it earned its fixed charges in only two of these recent years. Because of

these unprofitable years, it was forced to borrow from the R. F. C. as early as 1932. On December 31, 1938, its R. F. C. loans amounted to \$16,000,000. In May, 1937, these loans were extended so that the bulk would mature on June 1, 1942.

In 1938 the R. F. C. agreed to make an additional loan to the Erie to meet maturing obligations if the Chesapeake & Ohio, which controls it through stock ownership, would guarantee the loan. The unwillingness of the C. & O. to meet this stipulation, supplemented by unprofitable operations in 1937, precipitated bankruptcy on January 18, 1938.

Since this action, three plans have been suggested for the reorganization of the Erie, which would reduce its interest requirements. Late in 1938 institutional creditors proposed that fixed charges be limited to \$8,500,000, compared with \$14,550,000 prior to bankruptcy; and that present stockholders be given warrants rather than new stock. The company offered another plan in December, 1938, which would reduce fixed charges to \$6,485,000 and fixed and contingent charges to \$15,327,000, while at the same time giving each existing equity share one new share of common stock. Another plan outlined in a report made by Examiner Milo H. Brinkley of the Interstate Commerce Commission on August 21, 1939, and reported in the *Railway Age* of August 26, page 317, proposed a total capitalization of \$251,358,602, with annual interest charges aggregating \$6,071,626, or \$7,200,000 including rents and leases, as compared with the total capitalization of the old company of \$508,553,630. This report also recommended 2,554,736 shares of no par value common stock and \$88,425,147 of \$100 par value preferred stock, of which present preferred and common stock holders would be allotted 429,736 shares of new common on the basis of 1 for 5, and warrants for the purchase of additional common stock at \$35 per share.

The Erie is a trunk line between New York and Chicago with relatively little branch line mileage. It operates in a densely populated and highly industrialized ter-

ritory and enjoys a favorable traffic density. Forty per cent of its revenues in 1938 came from merchandise, 26 per cent from products of mines, 13 per cent from agricultural products, 9 per cent from animal products, and 3 per cent from forest products. Of its tonnage in that year, 56 per cent was products of mines, 28 per cent was manufacturers products, 8 per cent was agricultural products, 3 per cent was animal products and 2 per cent was forest products.

Mr. Woodruff was born on September 11, 1884, at Green Bay, Wis., and received his education at Purdue University. He entered railway service in 1905 as a section laborer on the Erie. Until March, 1909, he served consecutively as track foreman, construction engineer, assistant division engineer, division engineer at Meadville, Pa., and trainmaster. Since that time he has been in the operating department, first as general agent at Chicago. In November, 1910, he was promoted to superintendent at Rochester, N. Y., and continued in that position at Marion, Ohio, and at Youngstown, Ohio, until 1917, when he was promoted to superintendent of transportation. On July 1, 1918, he became general superintendent of the Lines West of Buffalo. On March 1, 1920, he was promoted to general manager of the Hornell region, and when that region was broken up in 1922 he was appointed division superintendent at Buffalo.

He was promoted to general manager of the Eastern district in February, 1927, in which capacity he served until December, 1928, when he was elected assistant vice-president. On May 24, 1929, he was elected vice-president in charge of operation.

## G. M. & N.—M. & O. Merger Approved

WASHINGTON, D. C.

**A**PPROVAL of the first major railroad consolidation since the beginning of the depression was given by the Interstate Commerce Commission on October 23, when it approved the merger of the Gulf, Mobile & Northern and the Mobile & Ohio into a new system to be known as the Gulf, Mobile & Ohio. The newly-created system will have some 2,018 miles of lines and will extend from East St. Louis, Ill., to ports on the Gulf of Mexico.

In order to approve the merger, the commission was forced to make a major change in its "official" plan of consolidation promulgated in 1929, which was drafted pursuant to the mandate of the Transportation Act of 1920. What was done was to shift the G. M. & N. from System No. 8, Atlantic Coast Line, to System No. 11, Chicago & North Western. Since 1909, the general transportation bill pending in Congress would relieve the commission of its duty to carry out the "official" consolidation plan; meanwhile, its action in this case would seem to indicate a disposition to approve major amendments to the "official" plan in order to clear the way for favorable action of well-conceived and soundly-financed merger proposals.

### Commission Issues Three Decisions

Briefly, the commission, in three separate decisions, accomplished the following:

1. Approved the purchase by the Gulf, Mobile & Ohio (the new corporation which will operate the combined properties) of the properties of the M. & O., merger therewith of the Gulf, Mobile & Northern, and acquisition

by the G. M. & N. of further control of the New Orleans Great Northern;

2. Authorized the G. M. & O. to issue various securities in order to effect an exchange of existing obligations of the merging lines;

3. Approved a \$9,500,000 Reconstruction Finance Corporation loan to the G. M. & O. to be used to purchase the \$7,839,500 par amount of the M. & O. general mortgage bonds now owned by the Southern for \$7,295,465, for interest on these bonds, and for certain additions and betterments and rehabilitations; and

4. Modified the official consolidation plan so as to assign the G. M. & N. to the Chicago & North Western in lieu of the Atlantic Coast Line.

In its discussion of the case the commission said that "The record impresses us that, if the applicants are successful in the equity proceedings before the court, consummation of the proposals presented to us will promote the public interest generally by terminating the long receivership of the Mobile & Ohio and by giving stronger assurance of preservation of essential parts of both systems to the territory which they serve."

### I. C. Opposes Plan

The principal opposition to the merger came from the Illinois Central, which maintained that the proposed consolidation would create a new and unnecessary south-to-north trunk line, the presence of which would result in serious damage through loss of traffic to the existing trunk lines. As an alternative, the Illinois Central urged that the two lines be maintained as feeders or assigned to the Illinois Central for eventual consolidation with the system.

"It is evident," the commission said in commenting on this opposition, "that a major part of the losses feared by the Illinois Central already has been accomplished by the diversion of Gulf, Mobile & Northern traffic to the Mobile & Ohio at Jackson, Tenn. We think the usual requirement that existing gateways and through routes be maintained will provide sufficient protection to other carriers."

### Conditions Imposed

The commission decision stated that owing to the indeterminate status of some of the proposals in connection with the consolidation, the authority granted would be subject to the following conditions:

1. Gulf, Mobile & Ohio, before exercising the authority granted, must file with the commission a verified statement as to whether it has or is able to acquire the properties of the M. & O. free of all liens, except as may be imposed by the court, and stating the purchase price; and giving detailed information as to reorganization expenses, claims allowed by the court, and the distributive amounts payable to the respective classes of non-assenting security holders; and

2. File a statement showing the number of shares of each class of stock of the G. M. & N. voting in opposition to the plan, the number not voting, the amount of cash required to pay stockholders not assenting, and the source from which the funds were obtained.

With the exception of the general mortgage bonds of the M. & O., which are to be purchased for cash, the holders of less than a majority of the M. & O. bonds have indicated approval of the plan and the stockholders of the G. M. & N. have been advised by letter of the plan, but have not yet voted on the proposal. No protests have been received to date. That a majority of the holders of

(Continued on page 662)



# New Autos—Some Take Highroad and Some Take the Railroad

I. C. C. investigation of transportation of new cars to four test cities embraces aim of developing complete economic panorama

**W**HAT may be a precedent-setting proceeding in the ticklish business of rate-making to satisfy both the public interest and quarreling carriers as well reached an important stage in Boston, Mass., on October 20 when I. C. C. Examiners Disque and Lawton heard the testimony of a score of automobile dealers with respect to how they received shipments from manufacturing or assembly plants. The proceeding, docketed as No. 28190, New Automobiles in Interstate Commerce, was initiated on January 27, when the Commission instituted "an investigation into the rates, charges, rules, regulations and practices of all common and contract carriers in the transportation of new automobiles set-up, in carload, truckload and quantity lots."

Questionnaires were sent to all carriers hauling new automobiles asking data on cars handled in 1938 in both inter- and intra-state commerce; to manufacturers and to 33 of their plants throughout the country and to dealers or consignees located in four test cities—Boston, Mass., Harrisburg, Pa., Washington, D. C., and Cincinnati, Ohio. The returns thereto have been tabulated in part and are being put out by the Commission in the form of exhibits of which some 35 have been introduced. Hearings opened in Detroit, Mich., on September 19 when testimony was heard from representatives of both carriers and manufacturers. The October 20 hearing at Boston represents the first at a test destination point in which consignees only took the witness chair.

## Represents a New Type of Proceeding

The case has its origin in a war of rates on new automobiles which broke last year when the railroads sought to cut rates on this traffic. This move was vigorously parried by the National Automobile Transporters' Association by threats of further reductions on their part. To prevent a rate war and develop the full facts, the Commission, on its own behalf, initiated the proceeding under discussion which embraces the previous more general cases arising in connection with the rate war (I. & S. No. 4620, Automobiles, C. F. A. to East and South; I. & S. No. MC-675, Automobiles, Central States to East and South; and F. S. A. No. 17635, Automobiles to Southern Territory). Arthur F. White, assistant director, Bureau of Statistics, was enlisted to gather and prepare statistical data and assist the examiners in hearing witnesses.

The proceeding "is absolutely new," according to one member of the Commission staff. The I. C. C. wants all the facts. To obtain them, it will hear all parties concerned and, contrary to customary practice, is going to smoke out and assemble facts on its own account. Hence the extensive and detailed questionnaires and statistical compilations. In short, the Commission is not acting here as a judge between opposing interests alone but as body of investigation working to develop

a complete economic picture. On the basis of these findings, it will be able to prescribe rates and services which will reflect such complete bases rather than the allegations of contending parties at interest in proceedings limited in scope to the petitions of protestants.

## Why Transportation of New Autos Was Chosen

Why did the I. C. C. choose the transportation of new automobiles as the subject matter of this new kind of proceeding? First, developments in this field last year made some kind of broad investigation imperative. Second highway transporters of new automobiles use vehicles equipped to carry this type of load exclusively and customarily haul pay-loads in one direction only. This fact makes possible valid comparisons with competitors which is difficult in the case of contract truckers hauling miscellaneous cargoes. Third, automobiles are shipped from a limited number of points. Finally, new automobiles are carried by almost all types of common and contract carriers and, in addition, are conveyed along the highways on their own wheels. This gives wide scope to the case.

The four test cities cited above were chosen as test destination points chiefly because they present contrasted situations. Boston receives cars predominately by rail; Cincinnati largely by truck; Harrisburg is fairly well divided while Washington displays increasing diversion from rail to truck.

The Commission's notice for the hearing held at Boston and those scheduled at Harrisburg, Washington and Cincinnati reads that the proceedings are assigned "particularly for the purpose of hearing evidence respecting the advantages and disadvantages from the consignee's standpoint of the services of the several agencies of transport, including cost to consignee of unloading railroad cars and bringing automobiles to consignee's premises, together with all other considerations which the consignee takes into account in determining which agency to use in individual instances for this traffic."

## Dealers Give Reasons for Choice

Of the 17 dealers who testified at Boston, 9 said they received shipments all-rail, 6 pointed out that they received automobiles by lake-truck in the open season of navigation and by railroad during remaining months and one revealed that he received consignments entirely by lake-truck and truck. **A Ford dealer testified that he received his automobiles direct from Somerville (suburb of Boston) but was billed for the railroad freight charges from Detroit by the manufacturer. A Chevrolet dealer testified that the manufacturer shipped by rail from Tarrytown, N. Y., but billed him for the railroad rate from Flint, Mich.** Since, with these two exceptions, all the dealers customarily specified to the

manufacturers the method and routing of shipments, they were asked to explain the reasons for their choice.

It was brought out that in every case dealers receiving by railroad paid an unloading and delivery charge varying from \$1.75 to \$6 per automobile to contractors. Services rendered therefore ranged from simple unloading from cars to platform to a complete job of unloading, attaching bumpers, greasing and oiling and preparation of automobiles for sale. In several cases the contractors also stored consignments awaiting order for delivery to dealers. One distributor performed this service for the account of a subsidiary retail outlet at a book-keeping charge of \$4 per automobile.

When asked by counsel for the National Automobile Transporters' Association whether they would specify shipment by truck if rates were made high enough above the railroad rates to equalize the unloading and delivery charges necessary with rail delivery, all dealers answered "no," expressing a preference for railroad transportation, all other things being equal, except one dealer who would use the faster service.

### Why Consignees Prefer R. R. Service

Reasons expressed for preference for railroad transportation included: (1) more reliable, especially in bad weather; (2) autos arrive in better shape; (3) less damage to consignments; (4) railroads hold themselves ready for all-year service; (5) we require storage services which are difficult to obtain with truck delivery but easily performed in connection with contract unloading from railroad cars; (6) have no room to take deliveries from trucks and (7) are unable to take delivery from trucks calling at odd hours at short notice.

Most of the dealers who received autos via lake-truck during the open season (Great Lakes to Buffalo, N. Y., and truck beyond) declared that they shipped thus largely because of savings in rates and store-door delivery by the carrier, eliminating unloading and delivery charges. A DeSoto-Plymouth dealer reckoned the combined saving at \$6 per auto. A Nash dealer cited savings of \$8.23 per auto on a heavy model. Several also said that lake-truck was faster than rail; one dealer stated 5 days by rail and 4 days via lake-truck. Only one dealer mentioned night deliveries by truck as an advantage. Dealers shifted to the rails in winter because all-truck from the manufacturer affords little saving in rates; is unreliable because of the state of the roads in New England and delivers the automobile in a relatively worse condition. Only one dealer received by all-truck at all, and that only occasionally.

Further hearings were scheduled for October 27 at Harrisburg and November 3 at Washington.

## G. M. & N.—M. & O. Merger Approved

(Continued from page 660)

the stock must approve to make the plan operative is understood, the commission said in its decision, but there is no present indication of what percentage will not accept.

### New Securities to be Issued

Under the consolidation plan, the new securities to be issued and obligations assumed to provide about \$1,500,000 of new money for additions and betterments and to acquire the properties of the M. & O. will be represented

by \$16,403,700 of fixed interest obligations, \$6,025,800 of contingent interest obligations, 154,494 shares of no-par \$5 preferred stock and 306,288 shares of no-par common stock, while the cost of the G. M. & N.-New Orleans Great Northern properties will be represented by \$15,467,000 of fixed interest securities, 153,256 shares of no-par \$5 preferred stock and 303,559 shares of common.

This would result in a capitalization wherein the fixed interest bearing debt would be \$31,870,700, the contingent interest debt, \$6,025,800—a total debt of \$37,896,500.

The annual fixed interest charges under the proposed capitalization would amount to \$1,399,920, and contingent interest on the income bonds and dividends on the \$5 preferred stock to \$1,830,040, or a total of \$3,229,960, exclusive of charges in connection with the acquisition of new equipment and sinking-fund requirements.

The plan provides that the holders of the general mortgage bonds are to be paid for each \$1,000 principal amount of bonds with all interest due, about \$930 plus interest at two per cent from September 1, 1938, to the date of payment in cash. The necessary funds will be provided by the R. F. C. Certificates of deposit representing the remaining bonds and notes of the M. & O. will be exchangeable for new securities on the following bases for each \$1,000 bond with all interest accrued thereon:

Refunding and improvement bonds are to receive \$300 of first mortgage bonds, \$200 of general mortgage income bonds, 6.25 shares of no-par \$5 preferred stock and 12.5 shares of common. The five per cent secured notes will receive \$350 of first mortgage bonds, \$250 of general incomes, 7.75 shares of no-par \$5 preferred and 15.5 shares of common; the Montgomery division bonds are to get \$500 of general incomes, 6.5 shares of preferred and 13 shares of common; while the Mobile & Bay Shore bonds are to get five shares of no-par preferred and 16.5 shares of common.

### New Company to Assume Obligation

The securities to be assumed by the new company include \$990,000 of M. & O. equipment trusts and \$9,986,000 of first 5s and 5½s, \$590,000 of three per cent secured notes and \$1,152,000 of equipment trusts of the G. M. & N. The \$3,739,000 of publicly owned New Orleans Great Northern first 5s would be left undisturbed.

There is outstanding \$11,415,600 of G. M. & N. six per cent preferred stock, with dividend accumulations to April 1, 1939, amounting to 63½ per cent and \$13,539,400 of common stock. This will be exchanged for new stock of the G. M. & O. on the basis of one share of preferred and 1½ shares of common for each share of preferred and accumulated dividends, and ¾ share of common for each share of outstanding common.

While the New Orleans Great Northern, a G. M. & N. leased line, is not now to be merged with the Gulf, Mobile & Ohio, the holders of that road's income debentures on which accruals amount to 26½ per cent, will be offered in exchange for each \$100 principal amount and accumulated interest, one share of no-par preferred and ¾ share of common stock, and the holders of the road's common stock will be offered for each share ¼ share of new G. M. & O. common.

Commissioner Miller, in a short concurring opinion, said that he favored the approval of the merger, but went on to criticize the capital structure set up, contending that it "is too high and a better capital structure could and should be devised." Commissioners Caskie and Patterson did not participate in the disposition of the case.



# Locomotive Maintenance Men Meet at Chicago

**M**EETING for the first time under the name of the Locomotive Maintenance Officers' Association the newly-organized group of officers and supervisors who are primarily interested in the maintenance of locomotives convened at the Hotel Sherman, Chicago, for a three-day meeting on Tuesday morning, October 17, with an attendance of approximately 100. At the opening session on Tuesday morning, this association assembled jointly with the three other mechanical associations meeting coincidentally at Chicago to listen to an address by L. W. Baldwin, chief executive officer, Missouri Pacific, on the subject of training and coaching supervision. An abstract of Mr. Baldwin's address appeared in the *Railway Age* for October 21.

At later sessions addresses were made by F. E. Lyford, trustee, New York, Ontario & Western, and D. S. Ellis, chief mechanical officer, Chesapeake & Ohio, and the following technical papers were presented: Roundhouse Problems Caused by Long Runs by F. J. Fahey master mechanic, New York Central; Training of Apprentices by A. H. Williams, general supervisor of apprentice training, Canadian National; Forging and Heat Treating Locomotive Parts by L. B. Herfurth, forging supervisor, Missouri Pacific; Failures of Locomotive Parts and How to Prevent Them by F. H. Williams, assistant test engineer, Canadian National; Scheduling Locomotive Through the Shops for Classified Repairs by F. B. Downey, assistant shop superintendent, Chesapeake & Ohio; and Methods for Selecting Machinery and Tools for Locomotive Repairs by R. P. Dollard, shop engineer, Chesapeake & Ohio.

## The Qualities of a Good Supervisor

Mr. Lyford, in speaking of the qualities which an executive looks for in his supervisors, said, in part: "As a result of having spent several years as a supervisor in the mechanical department, I have often felt that the mechanical department of a railroad does not get the recognition to which it is entitled. Roughly speaking, the mechanical department is responsible for the expenditure of about 20 per cent of the gross revenue of railroad operation and I believe that there are many executives who do not recognize the tremendous effect that this expenditure has on the operation of a railroad. Executives are prone to think in terms of cars and their contents and the revenue which they bring in, overlooking the importance of the locomotive which pulls the train. This is a most important unit, and they should see that everything possible is done to provide the mechanical department with the facilities necessary to reduce transportation to its lowest possible cost by keeping equipment in the best of condition.

"It seems to me that mechanical department supervisors have been somewhat at fault in the attitude they have taken. In the hurry and rush of the enginehouse or shop they are likely to concentrate on getting a job out quickly in spite of the fact that it may not be thoroughly done. Because of this fact, it is necessary many times to do a job over and this repetitive work causes a waste of labor and material that can be prevented by adequate and intelligent supervision.

"Adequate supervision is the essence of good management, and management is not merely that of the head of an organization. An executive has a right to expect certain things of his supervisors, and there are four or five of these that seem to me to be of great importance.

"First, an enginehouse or shop foreman, or a superintendent of motive power, should be one of the most curious fellows in the world. He should always be asking why he should do this and why he should do that. Curiosity will save him a lot of expense and will help him if he puts it to good use. Men should be curious about the jobs that are ahead of them in order that they may be ready to step into them. Many executives and supervisors are too inclined to use the old army system of merely giving an order and not explaining what the reason is back of the order. The right men are curious about reasons and will do a better job when the reason is made clear. I had a little difficulty with a supervisor on our road recently. He was given a budget and when he overran it I called him in and asked him why he had done it. I explained to him that there was just so much revenue and that if every one ran over his budget we would all soon be out of a job. Then I showed him the company's operating figures and explained them to him. Finally, he said that this was the first time anybody had told him about the financial condition of the road, and now that he knew what the problems and difficulties were he would not overrun the budget again. From then on everything ran in good shape. I felt that he, as a supervisor, had the right to know and that he could work better if he knew what was behind all this. You will observe that your men are curious to know certain things, and if you explain matters of policy and change, you will soon realize how interested they are in their jobs.

"The second matter is that of supervisors being mentally and physically alert—looking like a supervisor and acting like one. The type of foremen who is constantly running around with his pockets full of papers may look busy but it does not mean that he is accomplishing much. The alert supervisor is the man who learns very quickly the important things to watch and by asking questions concerning these certain key factors can rapidly size up any situation.

"The third factor is resourcefulness. Resourcefulness is one of the most valuable assets that a mechanical supervisor can have. It is not only necessary in its application to the use of machine tools and small tools, but is just as necessary in the use of information that comes to his attention. The resourceful supervisor is always able to find just the right solution to a problem and the ability to use vital information properly is sometimes one of the easiest roads to the right solution. Statistics—vital statistics concerning the operations of the road and department—are of great value to a supervisor in running his job intelligently and he should train himself to recognize what the vital statistics are.

"The fourth factor is promptness. Time is essential on every railroad and things must be done on time. Promptness should be observed in recommending new equipment, new tools and in falling in line with new

methods. Be prompt about the situation that seems of utmost importance to you—do your job efficiently but be sure that you have it done on time. You should give your men the help they need to enable them to do their jobs quickly. Often this need only be a clear explanation.

"The last one of the factors is the question of honesty. A lot of supervisors are not honest with themselves because they are stubborn and refuse to recognize both sides of a question. It is necessary that a supervisor have his mind wide open at all times so that he can honestly approach each and every problem that he meets. Upon honest supervision depends the lives, safety and jobs of millions of people.

"In conclusion, I want to say that the railroads are probably the most important industry we have and are going to have for some time, but the mechanical forces are of utmost importance in this industry—that good equipment is fine but good men are better—you can do a lot with good men and poor equipment but not much with good equipment and poor men. I think that supervisors will realize that increasing curiosity, increasing alertness, increased resourcefulness, greater promptness and honesty with themselves are of utmost importance and that with these you can be an important factor in the future progress of the railroad business."

#### Maintaining Modern Power

In his address, Mr. Ellis discussed the factors that are of importance in the proper maintenance of modern locomotives. He said in part:

"The modern locomotive is called upon to produce higher sustained horsepower over longer periods of time and at higher speeds than those formerly existing, and must be in such condition at all times to meet these exacting requirements. Above all else, it must not be the cause of delays enroute. This leads us to the question at hand—the proper maintenance of locomotives.

"This problem has become somewhat complicated due to the addition of various auxiliaries. It is my honest opinion that the proper maintenance of a modern locomotive will be better accomplished if we do a little more work with our heads before we start in with our hands. In other words, first analyze the problem at hand and then set up the necessary machinery in the form of proper schedules, based on mileage or time, for doing certain work and when we do tackle the actual job of accomplishing it, do it right—go all the way, not half-way, turn it out as nearly 100 per cent right as it is humanly possible to do. Proper scheduling of repairs in advance is of utmost importance.

"Co-ordination and co-operation between departments is essential in order that the assigned mileage and the highest availability possible for the modern locomotive can be accomplished.

"Like all railroad problems, that of locomotive maintenance is one of economics, and a definite plan carried to its logical conclusion is vital. This requires the use of a definite measuring stick to determine when a locomotive should be shopped and for what purpose. This measure or barometer is usually assigned mileage, but this alone is not the whole answer for it is essential that it be supplemented by a detailed inspection of work necessary, covering the true condition of the unit before it is shopped. When the locomotive is finally placed in shop for repairs, these repairs should be made in the proper manner, performing each job by the means found best to suit the condition at hand.

"It is quite essential, when locomotives are shopped for repairs, that each shop supervisor consider the purpose

for which the locomotive is shopped, and it should be his aim to see that all work necessary is performed to keep the locomotive in service, barring unforeseen accidents, until it has made its full cycle of mileage, and so that it does not become necessary to make major repairs at terminals between shopping periods.

#### Thorough Inspection Important

"Going back to the maintenance of modern locomotives in regular service between shopping dates I recommend careful, detailed inspection and prompt performance of all work necessary prior to dispatchment of the locomotive so that when the locomotive is dispatched, the supervisor can rest comfortably in the knowledge that the locomotive will go out on its run and make its trip without causing any delay whatever to transportation insofar as mechanical details are concerned.

"As in the case of the back shop supervisor, the engine-house supervisor should at all times do the necessary work. Of course, it is understood that before the work can be done, the defects must be found, and, in many instances, herein lies the secret about engine failures which result in such costly delays.

"Carrying this thought still further and supplementing the work required by Federal Rules with those rules we know are necessary, namely—a complete, detail inspection of the locomotives each 30 days, and making the necessary repairs to keep the engine in service during the next 30 days is likewise most essential.

"I would seriously recommend to you at this time, if you have not already done so, the creation of a so-called standardized monthly inspection and instructions pertaining thereto, for if properly carried out the performance of the work thus reported will go a long way toward reducing engine failures and ultimately major repairs. The same thing, likewise, applies to so-called quarterly and annual inspections.

"What I am trying to bring out here is my former reference to co-ordination, for it is only through the co-ordinated effort of those responsible for the proper maintenance of modern locomotives, through each of the various inspection and repair operations mentioned that modern locomotives will be properly maintained.

"It is also important that we, as supervisors, familiarize ourselves with, and know the condition of each unit under our direct supervision. In other words, the mechanical head of the department will know this in a general way—the master mechanic in a still more complete way so far as the number of units under his direct supervision are concerned—the general foreman—the engine-house foreman—and the inspector, in complete detail. If all of those mentioned will study and know the condition of their individual engines, at all times, the job of maintaining the modern locomotive becomes much more simple.

"No talk of this nature would be complete without due reference to the training of shop and enginehouse forces in such a manner that each man may perform his work in the most efficient manner possible and in accordance with the prescribed instructions of each individual railroad and it should be the duty of each of us as supervisors to so train our men."

#### Election of Officers

At the afternoon session on the last day of the meeting, the following officers were elected for the ensuing year: President, F. B. Downey, assistant shop superintendent, Chesapeake & Ohio; first vice-president, J. C. (Continued on page 671)



# Car Officers Emphasize Need for Better Car Conditions

Association meeting in Chicago considers methods of securing more efficient utilization and maintenance of railway car equipment

**M**ORE efficient utilization and maintenance of car equipment, both passenger and freight, were objectives actively promoted at the annual meeting of the Car Department Officers' Association, held October 17-19, at the Hotel Sherman, Chicago. In spite of the fact that a considerable number of railroad men in attendance at the meeting failed to sign the attendance cards, the total registration was 330, which included 235 car department officers and supervisors, representing both railroads and private car companies, and 95 representatives of supply companies interested in car equipment, including all kinds of materials and specialties.

Following the joint session address by L. W. Baldwin, chief executive officer, Missouri Pacific, as reported in the *Railway Age* of October 21, C. J. Nelson, president of the association and superintendent, Chicago Car Interchange Bureau, delivered the presidential address and emphasized among other things the possibility of large savings through more careful selection of cars for commodity loading, reduction of cross hauling, more effective and economical maintenance methods, increased knowledge of how to apply the highly important rules of interchange and loading, and the provision of equipment in better mechanical condition to prevent loss and damage to freight. President Nelson called attention to the need for training younger men engaged in car department work and particularly developing an adequate force of experienced, competent supervisors to take charge of this important phase of railroad activities. He said that the association is national in scope and offers a common meeting ground for car men representing both the railroads and the private car companies, hence being well adapted to develop constructive information regarding detailed car maintenance practices and problems not commonly considered by the Association of American Railroads, Mechanical division.

## Executive Officers Commend Association

At one of the opening sessions, F. G. Gurley, vice-president, Atchison, Topeka & Santa Fe, said he was glad to offer every encouragement and assistance possible to the Car Department Officers' Association, both because of the desirable objectives of the association and because of the important part which members of the association play in efficient railroad operation. Similar sentiments were expressed by D. S. Ellis, chief mechanical officer, Chesapeake & Ohio, and by K. F. Nystrom, mechanical assistant to chief operating officer, Chicago, Milwaukee, St. Paul & Pacific.

Mr. Gurley referred to the vast improvement in car equipment from a maintenance standpoint, due to modern construction, and said that the railroads now face the problem of satisfying more particular shippers who demand better cars and better service and who must be

given what they want and made as "railroad-minded" as possible. In concluding his remarks, Mr. Gurley said that he was impressed with the frankness and fearlessness which the Car Department Officers' Association displays in discussing certain problems, a frankness and fearlessness not equalled or certainly not exceeded by any other organization. He urged the continuance of this characteristic if the association is to develop its maximum usefulness.

The association was also addressed by D. J. Sheehan, superintendent motive power, Chicago & Eastern Illinois, who called attention to a considerable number of specific instances in which desirable freight car maintenance standards, as well as A. A. R. loading and interchange rules are not being adhered to, with attendant serious increase in operating and repair costs, as well as loss and damage payments; not to mention dissatisfied shippers. He said that in the past two months thousands of freight cars have been returned to railroad service, many of them not being suitable for handling the commodities for which they were built, and cited, as instances, composite gondola cars offered for coal shipments with a high percentage of the side planks broken, flat cars placed for machinery loading with decks seriously defective, etc. He expressed the opinion that car department officers have a definite responsibility in keeping the general officers of their respective railroads acquainted with unsatisfactory car conditions. He said that they must be conscientious in their duties and have the courage of their convictions, not permitting cars to remain in service if unfit for loading and, by the same token, not marking any cars "bad order" which are fit to move commodities on the rails.

Mr. Sheehan closed his address with the following paragraph: "There is another responsibility which rests on the shoulders of car department officers and I believe this responsibility overshadows all others. The officers of the car department are charged with the responsibility of maintaining the rolling stock of the railroads in a safe condition to operate. When a passenger train leaves Chicago with its human cargo to go thundering at high speed over the rails, a car department officer, or one of his employees, is the last man to pass his approval on the safe condition of that equipment. When a freight train is made up at a terminal and before it starts on its journey through the night, a car department officer or his employee must know that the lives of those men who are operating that train, and the commodities carried, are properly protected insofar as equipment is concerned . . ."

Other speakers at the convention included R. V. Wright, managing editor, *Railway Age*, who suggested that the association give special consideration to the important human element present in practically all kinds of car department problems; C. H. Dietrich, executive vice-chairman, Freight Claim Division, A. A. R., who

discussed "The Relation Between Loss and Damage to Freight and the Equipment in Which it is Handled"; and Leroy Kramer, vice-president, General American Transportation Corporation, who presented the subject, "Private Car Operation—the Stepchild of the Railroads."

The reports on car subjects were presented by their respective committee chairmen as follows: Freight and Passenger Car Construction and Maintenance, Chairman J. McMullen, superintendent car department, Erie, Cleveland, Ohio; Shop Operation Facilities and Tools, Chairman, J. A. Deppe, superintendent car department, Chicago, Milwaukee, St. Paul & Pacific, Milwaukee, Wis.; Passenger Train Car Terminal Handling, Chairman, G. R. Andersen, supervisor of car maintenance, Chicago & North Western, Chicago; Lubricants and Lubrication, Chairman, J. R. Brooks, supervisor lubrication and supplies, Chesapeake & Ohio, Richmond, Va.; Freight Car Inspection and Preparation for Commodity Loading, Chairman, F. G. Moody, master car builder, Northern Pacific, St. Paul, Minn.; Interchange, Chairman M. E. Fitzgerald master car builder, Chicago & Eastern Illinois, Danville, Ill.; Loading Rules, Chairman, H. H. Golden, supervisor, A. A. R. Interchange and Accounting, Louisville & Nashville, Louisville, Ky.; Billing for Car Repairs, Chairman D. E. Bell A. A. R. Instructor, Canadian National, Winnipeg, Man.; Painting, Chairman, L. B. Jenson, passenger shop superintendent, Chicago, Milwaukee St. Paul & Pacific, Milwaukee, Wis.

#### Election of Officers

At the conclusion of the committee reports the following officers were elected to supervise the affairs of the association during the ensuing year: President, J. S. Acworth, supervisor of equipment, General American Transportation Corporation; vice-president, A. J. Krueger, superintendent car department, New York, Chicago & St. Louis, Cleveland, Ohio; vice-president, E. S. Smith, master car builder Florida East Coast, St. Augustine, Fla.; vice-president, F. E. Cheshire, general car inspector, Missouri Pacific, St. Louis, Mo.; vice-president G. R. Andersen, supervisor of car maintenance, Chicago & North Western, Chicago. F. L. Kartheiser, chief clerk-mechanical, Chicago, Burlington & Quincy, was re-elected secretary-treasurer.

In accordance with the new constitution adopted by the association this year, retiring president C. J. Nelson, superintendent, Chicago Car Interchange Bureau, becomes chairman of the Board of Directors, other members of whom include H. H. Urbach, mechanical assistant to executive vice-president, C. B. & Q., Chicago; C. Claudy, master car builder, G. T. W., Battle Creek, Mich.; P. P. Barthelemy, master car builder, G. N., St. Paul, Minn.; S. O. Taylor, master car builder, M. P., St. Louis, Mo.; J. M. Brophy, superintendent car department, I. C., Chicago; H. H. Golden, superintendent, A. A. R., Interchange & Accounting, L. & N., Louisville Ky.; W. A. Bender, master car builder, Alton, Chicago; G. E. McCoy, assistant general superintendent motive power and equipment, C. N., Toronto, Ont.; E. M. Wilcox, assistant superintendent of equipment, N. Y. C., Chicago; J. E. Keegan, chief car inspector, Penna., Chicago; C. E. Strain, superintendent car department, P. M., Grand Rapids, Mich.; J. P. Morris, general mechanical assistant, A. T. & S. F., Chicago; J. A. Deppe, superintendent car department, C. M., St. P. & P., Milwaukee, Wis.; C. H. Morgan, superintendent, Armour Car Lines, Chicago; J. J. Root, Jr., assistant to vice-president, Union Tank Car Company,

Chicago; J. W. Fogg, vice-president, MacLean-Fogg Lock Nut Company, Chicago; and L. H. Gillick, assistant to vice-president, Vapor Car Heating Company, Chicago.

## Private Car Operation Helps Railroads and Shippers

By Leroy Kramer\*

After explaining how private car companies happened to be developed and what functions they perform, Mr. Kramer closed his address with the following remarks:

Many times it has been claimed that the private car industry is a leech upon the railroads and that the service rendered by the private car companies could be better handled if operated directly by the roads.

Neither of such claims is, in my opinion, based upon a thorough knowledge or understanding of the subject. On the contrary, it is my opinion that the railroads could have saved a huge amount of investment and considerable yearly operating expenses, if they had not individually provided as many cars for themselves as they have in the past. It has been their practice to generally provide enough various types of cars to protect their maximum requirements. It would have been better if they had provided enough to protect their normal requirements but had allowed private car groups, strategically situated, to supply the excess requirements of certain classes of equipment to certain groups of roads whose seasonal needs did not conflict.

#### Private Companies Reduce the Need for Surplus Car Equipment

Do not mistake this proposition as suggesting a national pooling of equipment. There are too many diverse types required in different parts of the country and too much inertia in the handling of large groups of equipment, to believe that any car economy would result from a national pool. On the other hand, if a few well-organized, well-run, financially-stable private car companies could supplement the railroad equipment in various districts during various seasons, it would reduce the need for some of the surplus requirements and would better serve the districts which could call upon these companies for their unusual demands.

Much of this type of private car operation, either by districts or by industries, is now undertaken by existing private car companies, some of them having been organized by the railroads themselves, to protect more adequately certain branches of their service. These same types of companies could have added box cars, stock cars, and open type equipment to their fleets and by reason of their closer contacts and knowledge of requirements in the various districts in which they operate, brought about an economy in the use of equipment not now possible.

The above thoughts have been expressed without any idea that they will be adopted but there is much food for thought at this time and in the future, if the railroads are to be brought to the most efficient operating degree. The last two decades have shown conclusively that the railroads no longer have a monopoly. There are other forms of transportation, and while I agree that these forms of transportation have been unduly subsidized by the public, yet I cannot believe that they are to be ignored or eliminated.

Thus it becomes incumbent upon railroad management  
(Continued on page 669)

\* Vice-president, General American Transportation Corporation



# Railroads at National Safety Congress

Panel discussion over-runs time limit and spreads into two-day forum;  
notable speakers outline ways and means to overcome  
"tenacious" types of accidents

**S**AFETY as "purchasable" commodity that may be bought by the expenditure of money and time was the keynote of the 28th National Safety Congress and Exposition held at Atlantic City, N. J., October 16 to 20, inclusive, under the direction of the National Safety Council, Inc., Chicago. Col. John Stilwell, vice-president, Consolidated Edison Company, New York, was elected president of the council for the coming year. Railroad representation on the panel of vice-presidents of the council is given by the election of A. V. Rohweder, superintendent safety and welfare, Duluth, Missabe & Iron Range, as vice-president for home safety. Railroaders elected to the executive committee of the Council comprise Roy V. Wright, managing editor, *Railway Age*, and G. T. Helmuth, safety officer, Chicago, North Shore & Milwaukee.

The steam railroad section convened on the afternoons of October 17 and 19, with E. L. Henry, assistant to general manager, Chicago & North Western, presiding.

## Panel Discussion Lengthens Into Two-Day Forum

A railroad safety panel scheduled for the afternoon of October 17 far out-ran its allotted time and it was decided by the 100-odd railroad men present that it be carried over to the following day, although no meeting of the steam railroad section was then scheduled. Not even this extra morning session could exhaust the subject or the participants, however, for it was found necessary to hold a third session in the afternoon of Wednesday when finally the group felt that the subject had been adequately aired. Four leading problems brought up as "starters off" in the panel discussion were: (1) Trespassing Accidents—What is the Cure?; (2) Grade Crossing Accidents—How Can We Combat Them?; (3) Train Service Employee Mishaps—Their Cause and Prevention; (4) Discipline—Why and How? Those participating in the discussion were: A. O. Beck, system supervisor first aid and accident prevention, Canadian National; F. R. Bradford, director of safety, Boston & Maine; W. J. Flannigan, assistant supervisor of safety, Northern Pacific; P. W. Neff, superintendent, Monongahela division, Pennsylvania; J. R. Tenney, supervisor of safety, Western Maryland and W. J. Weil, supervisor of safety, Delaware, Lackawanna & Western. Mr. Flannigan participated in place of W. W. Fuller, superintendent of safety, Seaboard Air Line, who was originally scheduled to appear.

## Gormley Reviews Rail Safety Since 1923

M. J. Gormley, executive assistant, Association of American Railroads, was the chief speaker at the afternoon session on October 19. It was his opinion that 1938, on the whole, was the safest in railroad history. Excluding trespassers and persons involved in highway

grade crossing accidents, there were 83 per cent fewer fatalities and 89 per cent fewer injuries to persons in railroad accidents in 1938 than in 1913, the birth year of the National Safety Council. Using the year 1923 as a base year, because, in his opinion, the modern era of improved efficiency in railroad operations started therein, Mr. Gormley made a comparison between that year and 1938 with respect to the railroads' safety record which follows in part:

In 1923, there were 27,497 train accidents on the railroads of the United States, or at the rate of 22 accidents per million train-miles. In 1938, the number of such accidents was 5,682, or at the rate of less than 7 per million train-miles. In other words, the frequency of such accidents was reduced by 69 per cent, or more than two-thirds. Only a small percentage of train accidents, about 7 per cent, result in casualties of any kind to persons.

The amount of damage to railway property in train accidents, including cost of clearing wrecks, was \$27,625,000 in 1923, which was reduced to \$9,082,000 in 1938. The cost of these accidents was 2.22 cents per train-mile in 1923 and 1.09 cents per train-mile in 1938. If the 1923 average had prevailed in 1938, the cost of train accidents in 1938 would have been \$9,334,000 greater than it actually was, or more than doubled. The 1938 frequency rate of train accidents was the lowest ever recorded by the railroads. During the first five months of 1939, the latest period for which we have figures at this time, that rate was slightly lower and a new safety record for train accidents may be realized for the year 1939.

## Employee Safety Improved As Speeds Increased

In 1923 there were 31 fatal and nonfatal injuries to employees on duty for each million man-hours worked. In 1938, there were less than 7 casualties per million man-hours, or a reduction of 72 per cent. It is significant that this improvement in employee safety took place during the period of greatest relative increases in average speed and average load of trains. In the freight service, average speed of freight trains between terminals increased 52 per cent from 1923 to 1938, and the average number of cars per train increased 21 per cent. During this same period of years, the casualty rate of road freight train and engine service employees was reduced 64 per cent for each million man-hours worked. In the passenger service, trains were also speeded up, new lightweight trains of streamlined design were introduced, and the standard of the service was generally raised. Road train and engine service employees in passenger service were 66 per cent safer in 1938 than in 1923. In yard service, train and engine employees were 72 per cent safer.

Improved safety conditions on the railroads were not

confined to road and yard train operations. Employees engaged in maintenance work also enjoyed a large reduction in casualty frequency rates. For the maintenance of way group, casualties were 70 per cent less frequent per million man-hours in 1938 than in 1923. In the maintenance of equipment group, the improved safety conditions resulted in a decline of 86 per cent in casualty frequency.

### Safety Competition

Mr. Gormley commented extensively on the value of inter- and intra-railroad competition as a spur to safe methods. Said he: "Much good has come from comparative studies of the accident records of individual roads, and it is noteworthy that the winners of national safety awards today earn their medals only after the closest battle, largely because competing roads have found the weaknesses in their own records and have taken the necessary steps to correct them. This was not true ten or fifteen years ago. At that time there were a few railroads that stood head and shoulders above the others in the annual safety ratings, but the stimulus of competition has done much to spread safety more evenly among all carriers."

### How to Combat the "Tenacious" Accidents

There followed a group of four ten-minute talks by railroad safety officers covering lessons learned from the investigation of accidents in separate branches of the railroad service. O. F. Gnadinger, supervisor of safety, Elgin, Joliet & Eastern, discussed those accidents involving maintenance-of-way with particular reference to accidents which persist in spite of safety programs. For the purposes of his paper he took at random 200 maintenance-of-way accidents causing loss of time from work, all of which occurred more than ten years ago. Of these more than half were caused in handling of material; 14 per cent were accounted for in the use of hand tools; 10 per cent involved falls, the majority of which were due to bad conditions underfoot; motor-cars and hand-cars accounted for about 6 per cent; while the remainder were due to strains and sprains, many of the latter arising from poor physical condition of employees.

It was Mr. Gnadinger's opinion that any given group of accidents of today would reveal about the same proportions of causes.

Believing that the way department faces a unique problem in that the majority of its employees are unskilled, the speaker stressed the necessity of thorough physical examinations, particularly to ensure good sight and hearing, full use of limbs and freedom from hernia and chronic ailments and the special need of good supervision for inexperienced employees. He urged that foremen teach the correct use of tools by constant repetition, at the same time watching that all equipment is in safe and usable condition.

### Importance of Impartial and Thorough Investigation

F. W. Curtis, supervisor of safety, Denver & Rio Grande Western, handled the subject as it related to the maintenance of locomotives. He cited a group of locomotive department accidents, a portion of which follow:

A machinist apprentice dropped a bottom guide plate and broke his toe. The investigating committee found nothing wrong with the method but it persuaded the boy and he promised to wear safety shoes. A stationary engineer pulled down on a dump lever to dump a car

of coal. He failed to let go of the lever soon enough and pinched his hand. Investigation revealed an easy but unsafe method. He was told to stand on end sill of car and push down on lever. These instructions were general to all coal dock employees; so this investigation had a wider significance than the single occurrence which was corrected.

A machinist missed the punch and hit his hand with his hammer. Investigation revealed he had always held his punch with his whole hand instead of with his fingers and thumb only. The investigation taught him something he should have learned years before. A boilermaker helper working in a fire box sat on the grates for some time with one leg doubled under him and strained his knee. The investigation revealed only something he should have known from almost any experience at work, namely, that a cramped position is uncomfortable and should be changed frequently to avoid strain. A machinist was removing a superheat unit through the smoke box. His helper lost hold of the unit, which made him lose his balance and fall on the blower pipe. The investigation disclosed the need for a third man to help lift these units and thereafter the third man was supplied and required.

A machinist measuring valve travel while his engine moved was caught between cylinder and roundhouse door. This investigation showed a very dangerous practice had not been detected until it culminated in this serious accident. General instructions were issued that work must not be done on sides of engines while that portion is moved through roundhouse doorways. It is pertinent to note that before the days of thorough investigations of minor accidents in the locomotive department the last part of the accident report on a case like this would have stated that the man was injured through his own carelessness, and nothing would have been done to correct the unsafe method of work. The case would have been closed there.

A machinist fell when a scaffold plank broke under his weight. Investigation did not stop until it revealed the source and condition of the plank and the responsibility for its use in the scaffold.

Mr. Curtis declared the informal method of inquiry by a representative investigating committee to be the most effective. For the best follow-up, he advocated widespread publicity. He believed that the investigations cited were effective because they: (1) were impartial and thorough; (2) pointed out corrections; (3) sought out remote as well as immediate causes; (4) obtained employee and officer support; and, (5) popularized corrective discipline.

### Accident Findings Should Be Publicized

C. F. Larson, superintendent safety, Missouri Pacific, discussed accidents as they involve stations and stores. It was his special contention that the lessons gained from thorough and impartial accident investigations should be made public to employees so that all may know the cause and the suggested remedies. He pointed out that on his own road educational bulletins are issued by superintendents and placed upon notice boards consulted by all employees. The subject matter of these bulletins outlines: (a) what happened; (b) how it happened; (c) why it happened; and, (d) how it could have been prevented.

Any inquiry, he asserted, should be so planned and conducted that *all* the facts will be brought out and every possible underlying cause pursued, even to the physical and mental state of those involved.

Inasmuch as the majority of accidents in store houses



and stations are caused by material handling or falling, and as these are most numerous when hand equipment is used, he concluded in his investigations that the use of mechanical equipment such as cranes, tractors and lift trucks would most effectively reduce accidents. Concurrently, their use would cut costs. He also urged the general use of safety shoes.

### Safety Since 1924—The Turning Point

D. D. Fennell, president, National Safety Council, addressed the Steam Railroad Section on "The American Railroads' Contributions to Safety in America." Recalling that the steam carriers were a chief influence in the inception and organization of the Council, the speaker gave it as his opinion that the safety movement on the railroads reached a climax at the annual meeting of the Safety Section of the A. R. A. in June, 1924, when the delegates resolved to set up a goal calling for a reduction of 35 per cent in casualties to all persons, to be achieved by 1930. The goal was far surpassed; by the close of 1930 total casualties to all persons in railroad accidents had been reduced by 69.2 per cent and, in the case of railroad employees alone, 69.7 per cent.

Reviewing the safety gains on the railroads since this "turning point" year of 1924, Mr. Fennell said: "In 1923, there were 2,134 fatalities among railroad employees of all classes, and there also were 151,766 employees injured while on duty to the extent of three or more days. The death rate per million man-hours was about 0.43, and the injury rate was 30.53. If these rates had been allowed to continue unchanged throughout the succeeding 15 years including 1938, there would have been a total of 21,700 deaths among railroad employees and 1,540,000 serious injuries. Actually, however, there were only 15,700 deaths, and 760,000 injuries. The figures show, then, that during these 15 years the lives of 6,000 employees were saved and 780,000 injuries were prevented by the railroad's organized safety work."

### Items to Be Stressed in Future Programs

The Council president, in closing, suggested that the following three items be stressed in any future railroad safety program:

"(1) Closer and more complete cooperation among all the existing safety organizations, both national and local, for the more perfect coordination of effort and for the fullest possible exchange of accident experience and accident knowledge.

"(2) More intensive organization and promotion of safety programs on the railroads where this work now is in progress, and widespread organized efforts to secure the adoption of such programs on all the railroads, both large and small, in our country.

"(3) Acceptance by the American railroads of a chief share in the promotion of a national safety consciousness, by means of public relations activities, by public safety educational programs, and by the encouragement of legislative measures to improve accident conditions, to the end that every citizen of our country may become personally interested in safety and accept his own share in the safety activities of his community."

An address delivered by Carl R. Gray, Jr., executive vice-president, Chicago, St. Paul, Minneapolis & Omaha, and a discussion by C. L. La Fountaine, general safety supervisor, Great Northern, will be reviewed in a future issue.

## Car Officers Emphasize Need for Better Car Conditions

(Continued from page 666)

ments as a whole, to consider seriously any and every feature of their operating problems with the view of bringing about the most satisfactory, complete and economical service to their patrons. In this object there is no doubt but what the private car companies can be of tremendous benefit.

### Competition Causes Changes in Railroad Transportation Methods

Looking ahead, it is apparent that competing forms of transportation have imposed upon the railroads the necessity for changing their methods. All sorts of ideas have been presented, some of which are sound, but many are desperate attempts to "wish" traffic back on the railroads. This form of wishful thinking cannot accomplish results.

Referring to the high class merchandise freight which has so largely gone to the trucks, a survey was made in Chicago recently to determine whether those shippers now using trucks would go back to the railroads with equal rates and equal time of delivery. Over 200 shippers were contacted and in only one case did the shipper agree that he would return to the railroads on an equal basis. All the others said that either they must get better rates or better service before they will give up the convenience of trucks. Therefore, in this battle of highway transportation against railways, it is best to face the truth and I advise you car department officers to begin learning about the maintenance of trucks. Some railroads have already engaged in truck transportation and others have stock interest in trucking companies. The latter case is similar to certain railroads having stock interest in private car companies handling railroad cars. The effect is the same. In other words, the railroads are now giving the shipper what he wants and I can foresee a much increased co-ordination between the railways and highway transportation in the future.

The principal object of operating railroads is to make net earnings. If they can make money by the use of buses or trucks in coordination with rail service, it is time to use imagination and work out such a plan. For many years the word "transportation" referred almost exclusively to railroad transportation. Today it simply means getting products from one part of the country to another in the cheapest possible way. In the *Railway Age* of September 30, is the following pertinent statement. "The shipper diverts his goods from railroad to barge or truck—not because barges and trucks are less costly, but because they are less expensive (an important distinction)."

The private car industry today stands ready to give freely of its equipment, organization, engineering talent and imagination to provide better and cheaper ways for shippers to handle their products on the railroads.

EXTENSION OF THE METER-GAGE ARARAQUARA of Brazil for a distance of about 200 kilometers (124 miles) is provided in a contract signed recently between the railroad company and a contracting firm in Sao Paulo, Brazil. A special credit of 20,000 contos (\$1,000,000) has been authorized by the government of state of Sao Paulo for the purchase of rolling stock and equipment to be operated on the extension. The present line of the road extends for a total distance of 186 miles. The extension is to be from Mirasol to Porto Taboado.

# Antitrust Action Against A. A. R.

Civil complaint based on alleged policy of refusal to co-operate with motor carriers in through-route arrangements

WASHINGTON, D. C.

**T**HE Department of Justice announced on October 25 that Attorney General Frank Murphy had authorized the filing of a complaint in the District Court for the District of Columbia charging the Association of American Railroads, its officers and directors, and 236 member railroad companies, with violation of the Sherman Antitrust Act.

The bill of complaint charges that these 236 railroads have combined to restrain trade by agreeing not to extend to motor carriers the same cooperation in the carriage of freight and passengers which they customarily extend to each other. It is alleged that these railroads have jointly refused to establish rates on loaded trucks, trailers, and truck bodies, "all commodity" rates, container and similar rates, and have jointly refused to establish through rates, joint rates and fares, and joint billing arrangements with motor carriers in order to eliminate competition.

## Pelley Welcomes Action

Later in the same day President J. J. Pelley of the A. A. R. issued a statement in which he expressed appreciation of the spirit in which the Attorney General has approached this question and welcomed "a suit of this character in order that there may be once and for all authoritatively determined to what extent the railroads are permitted, under existing law, to declare sound policies, consistent with the public interest." In his statement Mr. Pelley called "attention to the fact that there is no A. A. R. declaration of policy on the subject of railroads and motor carriers establishing through routes or joint rates unless the effect of such action is to cause one railroad to invade the territory of another."

In a prepared statement signed by Thurman Arnold, assistant attorney general in charge of the enforcement of antitrust laws, and issued "in accordance with the Department of Justice's previously announced policy of making public the grounds for each important proceeding instituted," it was explained that the agreement which it is alleged contravenes the antitrust laws in this case consists of resolutions passed by the Association of American Railroads.

"The existence of these resolutions," the statement continues, "was revealed to the Department of Justice some time ago but due to limitation of personnel it has been impossible for the Department to investigate and take action. The agreement thus continued with the full knowledge of the Department. Moreover, the defendants in this action have cooperated fully with the Department in the investigation that preceded the filing of this case by providing it with complete information as to the conditions surrounding the agreements and other factors involved in the situation. In view of these circumstances and in view of the fact that a civil suit will adequately present the issues involved, the Department believes that a criminal action is inappropriate. If the court ultimately determines that the defendants' agreements contravene the antitrust laws and cancels them, and these remedies should prove insufficient, the way will

still be open for the institution of criminal proceedings, but it is not proposed to resort to these unless the civil suit should prove inadequate."

## Economic Significance Discussed

Turning to the economic significance of the restraints of commerce alleged to have resulted from the agreements, the statement says that "Through routes, joint rates and arrangements for joint billing and other through transportation practices are indispensable factors in the development and operation of any transportation system not based upon state ownership or private monopoly under unified control. The great network of railways operated by the defendant railroads, constituting the national railway system and the predominant transportation agency in the United States, would fall apart in a day in the absence of the maintenance of such practices. By virtue of such arrangements, the railroads, though independently and competitively operated, constitute potentially one great railway system, and without resort to unity of ownership or physical operation, are able to afford a continuity of transportation, singleness of charge and facility of movement indispensable to the needs of the commerce of the United States.

"Within the past two decades there has developed in the United States a new transportation agency, the motor carrier by highway, possessing many recognized inherent advantages such as speed of delivery, flexibility of service, and lower cost of operation.

"Engaged in such motor vehicle operations in interstate commerce are over 30,000 common carriers of property and over 2,500 common carriers of passengers operating over 200,000 motor vehicles. Through routes, joint rates, and continuous transportation practices similar to those in effect among the railroads are universally maintained among these motor carriers themselves.

"The nation's extensive highway system enables the motor carriers to make physical contact with the freight and passenger terminals of the railroads and thus makes practicable interchange of passengers and property between motor carriers and the railroads.

"It is alleged that the defendants have conspired to destroy this freedom of action on the part of the individual railroads by agreeing among themselves to refrain from exercising it and that an artificial barrier has thus been erected to prevent the interchange and continuous movement of traffic between railroads and motor carriers.

"One large middlewestern railroad has refused to subscribe to the agreements and has successfully established co-ordinated service with a motor carrier whereby it transports between Chicago and St. Paul loaded trailers consigned to it by the motor carrier. The defendants' agreements, it is charged, forbid such arrangements as this, as well as other methods of co-ordinated rail-truck service which have proved practicable, efficient and economical in the past and those which future experimentation and invention may prove to be so."

(This statement refers to the Chicago Great Western,



whose criticisms of the A. A. R. attitude toward joint rates with motor carriers have come into the open during the past two years in testimony of the C. G. W. trustees—Patrick H. Joyce and Luther M. Walter—in the Ex Parte 123 rate-increase case and at congressional hearings on S. 2009, the pending general transportation bill.)

### Results Anticipated By Arnold

Turning to the results to be anticipated by the present action, Mr. Arnold asserts that "If the restraint upon trade charged in the complaint is found to exist, this suit should restore to the individual railroads freedom of action to enter into through-transportation arrangements with motor carriers. Beyond this the purpose of the Department does not extend. It is not its function to promulgate a transportation policy for the nation, or to foster any plan for the solution of what is currently spoken of as the 'railroad problem'. Its sole duty in this case is to seek an emancipation of the railroads from the restraints of these agreements if they are found to contravene the Sherman Antitrust Act.

"While it is impossible, of course," Mr. Arnold concludes, "to determine now just what economic results would follow the restoration of freedom to individual railroads to deal with motor carriers, it is not unreasonable to expect that great impetus will be given to the establishment of co-ordinated rail-truck service, and that the practical experimentation in this field will develop more efficient and economical transportation channels, thus facilitating the movement of interstate commerce."

### Text of Pelley's Statement

The text of Mr. Pelley's statement follows:

"I have read the release issued by the Department of Justice, stating that a complaint is being filed by the Attorney General today in the District Court for the District of Columbia, alleging that the Association of American Railroads and its members have violated the Sherman Antitrust Act. While I have not seen the complaint as yet, I understand that the suit is based upon a resolution of the Board of Directors of the Association of American Railroads, adopted on June 25, 1937, which states:

'It is hereby declared to be the policy of the Association that the public interest will be promoted and the integrity and credit of the Railroad Industry improved and maintained if the railroads refrain from establishing with motor carriers through routes or joint rates or fares which invade territory not served by such railroad and which is already served by one or more other railroads.

'It is further the policy of this Association that it is not desirable for the rail carriers to enter into joint billing arrangements with, or to advance charges to motor carriers, except where the services of such motor carriers are within a terminal district.'

"Attention is called to the fact that there is no declaration of policy on the subject of railroads and motor carriers establishing through routes or joint rates unless the effect of such action is to cause one railroad to invade the territory of another. Under the law as it stands now, a railroad may not be constructed nor may it operate into the territory of another railroad without securing permission from the Interstate Commerce Commission. It is obvious that if railroads and motor carriers are to establish joint through routes and joint rates under which the territory of one railroad is invaded by another, the intent of the law would be defeated. There is no authority in the law for compelling railroads and motor carriers to establish these through routes and joint rates. The only purpose of the resolution was to conform the

practices of the railroads to the spirit of the law, and avoid wasteful duplication of transportation facilities and services.

"The Association of American Railroads was organized in 1934 to promote trade and commerce in the public interest, improve railroad service, maintain the integrity and credit of the industry in matters where obviously concert of policy and action is required. The Association has no power to force its members to conform to any particular policy. The resolution amounts to no more than advice to its members, representing the consensus of opinion as to what constitutes a sound policy.

"As the Attorney General's statement points out, at least one railroad has seen proper to disregard this advice and the Association has not undertaken to impose penalties or restrictions of any kind upon that member. It has long been recognized that a certain amount of co-operation in the matter of traffic and operating policies is essential if the railroads are to give to the public the service which the commerce of the country demands.

"I appreciate the spirit in which the Attorney General has approached this question and I welcome a suit of this character in order that there may be once and for all authoritatively determined to what extent the railroads are permitted, under existing law, to declare sound policies, consistent with the public interest."

## Locomotive Maintenance Men Meet at Chicago

(Continued from page 664)

Miller, general foreman, Nickel Plate Road; second vice-president and secretary-treasurer, J. E. Goodwin, shop superintendent, Missouri Pacific; and third vice-president, F. J. Topping, assistant master mechanic, Chesapeake & Ohio. The following members were elected to the executive committee: F. T. James, master mechanic, Delaware, Lackawanna & Western (chairman); F. W. Ekins, general foreman, Atchison, Topeka & Santa Fe; W. L. Jones, general foreman, Illinois Central. J. B. Dunlop, superintendent car shops, Canadian National and W. L. Rice, superintendent of shops, Reading, continue as members of the executive committee.

## Bridge and Building Men Study Many Problems

(Continued from page 658)

roads for water service in 1936. These statistics showed an expenditure of \$5,860,164 for the maintenance of water stations, \$15,900,521 for water for train locomotives, and \$3,326,531 for water for yard locomotives—a total of \$25,087,216.

The discussion of this report centered largely around the possibilities for increased efficiency and economy through the installation of modern, automatically-operated and controlled pumping equipment. R. C. Bardwell (C. & O.) cited the example of a road that, through the consolidation and modernizing of pumping plants since 1923, has effected a saving of more than \$250,000 a year. C. R. Knowles (I. C.) described the relocating and remodeling of a plant, changing from old steam equipment to automatic electric equipment, which reduced pumping costs from \$0.18 per 1,000 gal. to \$0.06 per 1,000 gal.

In another example cited, it was shown that water treatment on six divisions of a road was effecting annual savings of more than \$250,000.

# Motor Transport Section

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Type of Modern  
Equipment Used for  
Co-ordinated Service

## Reducing Train Stops Through Co-Ordinated Service

Kansas City Southern uses trucks to furnish more flexible service  
and relieve through trains

**F**OLLOWING the receipt of the necessary authority, the Kansas City Southern inaugurated highway operation on April 1 of this year and has made such progress in the intervening months as to have co-ordinated truck routes paralleling its entire railroad. Already, these have been productive of increased merchandise shipments and have resulted in freight trains being speeded up through the elimination of many local stops. Since nearly all of the trucks handle mail, baggage and express in addition to merchandise, the co-ordinated system has also resulted in the elimination of certain stops for passenger trains and the reduction of head-end work at other stations where stops are still made, permitting faster schedules for these trains also.

### A Complete Coverage

As early as 1935, the Kansas City Southern began the operation of intrastate trucks in Louisiana. A glance at the accompanying map, however, will indicate that, in order to provide complete coverage of the railway, interstate permission and authorities were necessary, since the K. C. S. follows the Missouri-Kansas and later the Arkansas-Oklahoma state lines closely, crossing such boundaries on numerous occasions. The request for permission to operate highway trucks supplementary to rail service was filed with the Interstate Commerce Commission and the necessary authority was granted last spring. However, it contained the restrictive provision that all

merchandise handled in trucks must also have a rail haul for some part of its journey. This has complicated serving local stations in the vicinity of large terminals, and it is understood that an effort will be made to secure sufficient relief from this provision to solve this difficulty, which causes delay to freight, inconvenience to shippers and unnecessary expense in handling.

### Present Set-Up

The early truck operations in Louisiana were carried on by the Kansas City Southern Transport Co., Inc., and this company will continue to carry out the operations, under a general manager, with headquarters in Kansas City. The solicitation of traffic is carried out by all the officers and drivers of the transport company, but is under the particular charge of the general merchandise agent of the railway who is also general freight agent of the transport company.

At the beginning the transport company carried on two types of operation—part of the mileage being operated direct and part under contract lease arrangement. Since that time some of the contract lease operations have been taken over by the transport company and the only one now in effect is that between Mena and Texarkana. Various types of equipment are used and the transport company is working to the end of doing its own maintenance work where the number of units out of any terminal is sufficient to justify.





The K. C. S. Parallels Its Line with Local Truck Service

The basis of the co-ordinated operation is train No. 77, which leaves Kansas City shortly after the freight-house closes. This train, with its truck connections, gives early first morning delivery to points as far south as Fort Smith, Ark., 328 miles, and first afternoon delivery at Texarkana, Tex., 487 miles, and Shreveport, La., 560 miles. After the freight-houses and transfers at Shreveport have closed, this train continues to Beaumont, Texas, and Port Arthur, giving early first morning delivery at these points on shipments from Shreveport, and second morning on shipments from Kansas City.

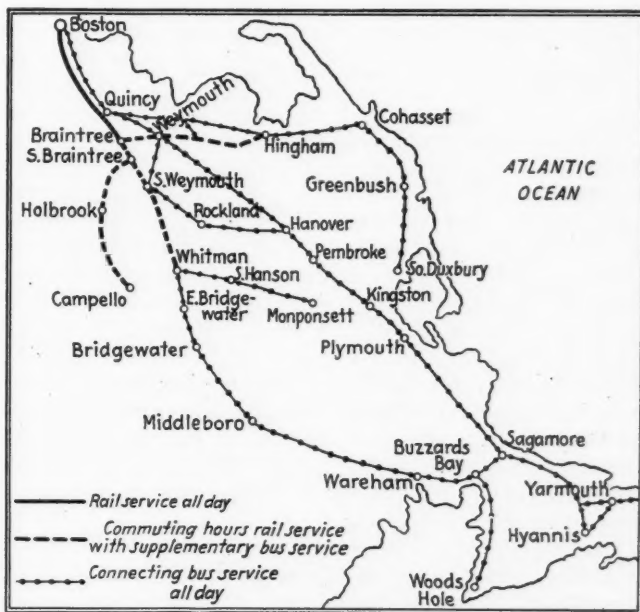
The local stations between Grandview, Mo., and West Line, in the vicinity of Kansas City, are served by truck out of that terminal. The first set-out made by No. 77 is at Hume, from which point merchandise is peddled to adjacent local stations by truck. Another set-out is made at Pittsburg and truck deliveries are made between that point and Joplin, including the Baxter Springs branch. Further set-outs are made at Neosho, where cars from connections are also picked up, and at Fort Smith, Texarkana, and Shreveport. Northbound cars are handled similarly to the same concentration and distribution points.

## Rail-Bus Service Proposed by Old Colony

**D**RASTIC curtailment of train service on the so-called Boston, Mass., group of the Old Colony lines has been made necessary by mounting losses suffered by the New York, New Haven & Hartford in its operation of the lines. The Old Colony trustees have recently placed full-page announcements in newspapers in the South Shore and Cape Cod areas outlining a proposed revision of passenger service, whereby railroad service for the suburban territory immediately adjacent to Boston would be retained; a rush-hour railroad service together with supplementary bus service afforded to the intermediate belt and a co-ordinated rail-bus service extended to outlying communities.

The chief purpose of the plan is to provide adequate service with a minimum of operating losses to an area which has thus far demanded and received frequent suburban train service over an extensive network of tracks. South Station, Boston, which is used by the Old Colony's trains, together with through trains of the New Haven and suburban and through trains of the Boston & Albany was once held to be the busiest passenger terminal in the country. But the short distances between the originating stations and Boston and the building of many excellent highways by the state and parking stations at city-line rapid transit stations by the Boston Elevated Railway has reduced Old Colony traffic to a losing basis.

Not only do the bondholders of the Old Colony demand that the loss of their equity by the piling up of operating losses to their account be ended at once, but the U. S. district court in charge of the New Haven reorganization insists that that road end its cash losses in operating the Old Colony. At the same time the Massachusetts Department of Public Utilities has been jealous of its right to insist upon adequate service being rendered and has been backed up in its contention by the Second Circuit Court of Appeals by a two-to-one decision. The case is now before the Supreme Court and a decision is expected this Fall. The Old Colony trustees originally set September 24 as the effective date for discontinuance of passenger service on its South



How the Old Colony Plans to Handle Suburban Service on Its South Shore and Cape Cod Lines

Shore and Cape Cod lines. A hurried conference with state representatives and institutional bondholders in August brought decision to postpone such abandonment to January 1, 1940, providing, however, that in the meanwhile public authorities and the trustees confer with a view to cutting losses as far as possible.

The co-ordinated service, which the Old Colony has submitted to a special transportation commission, would provide rail transportation for about 85 per cent of the present patrons and rail-bus service for the remaining 15 per cent. Hourly railroad service would be operated between Boston and Braintree (10 miles), in place of the present half-hourly service.

As indicated on the accompanying map, limited railroad service would be operated beyond on the lines which fan out from Braintree as far as Campello, Whitman and Hingham (22, 20 and 17 miles from Boston, respectively). From stations as far as these points, three morning commuters' trains would be run into Boston and three out in the evening with an additional evening train to Boston and morning train from Boston and a mid-day train out of Boston on Saturdays. To provide supplementary service on the line to Campello, it is proposed that existing bus services (independently operated) be utilized. For stations as far as Whitman it is proposed that 3 morning, 2 afternoon and 2 evening buses be operated northbound connecting at Quincy (8 mi. from Boston) with the hourly rail service to Boston, and 2 morning, 3 afternoon and 2 evening buses operated southbound from Quincy. Supplementary service from Hingham to Boston would be provided by 4 morning, 5 afternoon and 3 evening buses, connecting with trains at Quincy and in the reverse direction by 3 morning, 6 afternoon and 4 evening buses.

All passenger train service would be abandoned beyond Campello, Whitman and Hingham, and existing independent or New England Transportation Company bus services used to carry the load through to Boston or connecting with train services. Monponsett and South Hanson (on the present Plymouth rail line) would be served by two morning buses running cross-country to connect with trains to Boston at Whitman (on the present Middleboro rail line) and two evening buses in the opposite direction. Plymouth, Kingston and Hanover would be served by 4 morning and 3 afternoon express buses northbound and 3 morning and 4 afternoon buses southbound connecting with Boston trains at Quincy. Stations along the shore between South Duxbury and Marshfield Hills would have one bus up in the morning connecting with a Boston train at Hingham and one bus down in the evening. Stations on the same line between Greenbush and Hingham would have 3 morning buses up and 3 evening buses down connecting with through commuting trains at Hingham, while supplementary thereto, one morning, 3 afternoon and 3 evening buses would connect with Boston-bound trains at Hingham or Quincy and in the reverse direction, 2 morning, 2 afternoon and 2 evening buses would connect with trains at Quincy. Stations Middleboro and north would be served by 3 morning up and 3 evening down buses connecting with through trains at Whitman, together with an evening bus up and a Saturday mid-day bus down. Supplementary service would be covered by one morning, one afternoon and one evening bus up connecting with trains at Quincy and one morning, one afternoon and 2 evening buses down.

Passenger service on the loop branch line between Atlantic and Braintree would be entirely abandoned, but existing bus lines and the nearness of the stations thereon to the main stem would not unduly inconvenience patrons. Service on the 3¼-mi. line between West Hanover and

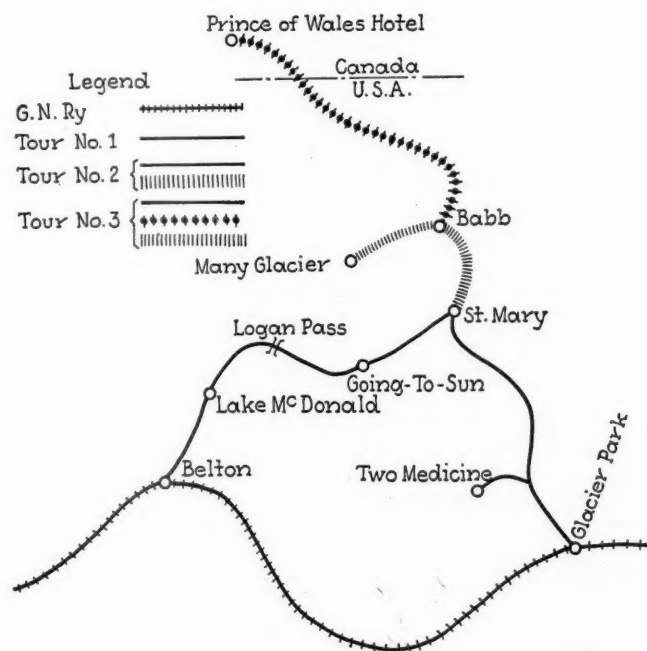
North Abington would also be dropped. Former Cape Cod rail service would be entirely replaced by through express buses direct to and from Boston proper (without train connection), except during the summer months. Stations Hyannis to Sagamore would be served by 2 morning and 3 afternoon express bus runs in both directions. Stations Woods Hole to Buzzards Bay would have one morning and 2 afternoon express buses in both directions. Yarmouth would be served by one morning and one afternoon bus in both directions. The above tentative service applies only to week-days.

## Mile-High Tours

**S**TARTING a few years ago, the Great Northern, in conjunction with the Glacier Park Transportation Company, developed co-ordinated rail-bus tours of Glacier Park on a profitable basis, and has since materially expanded their scope.

Tour No. 1, as shown on the map, was the original operation, but this has been augmented by two additional tours of longer duration. The first tour provides for approximately 24 hours in the park, the passengers transferring from westbound trains at Glacier Park at 12:50 p. m., and continuing their train journey from Belton the next day at 2:30 p. m. Eastbound, passengers transfer to the buses at Belton at 4:45 p. m., and board the trains at Glacier Park at 6:53 p. m., the following day. The itinerary of this tour provides for a trip across Logan pass and an overnight stop at Lake McDonald. Tour No. 2 includes all of Tour 1 and also an overnight stop at Many Glacier, or two days in the park.

Tour No. 3 includes all features of Tours 1 and 2 and, in addition, provides for a trip across the international border to Waterton, the Canadian national park adjoining Glacier park. This tour includes a three-day stay in the parks before the train journey is continued. Each of the tours is available, both east and westbound, daily from June 15 to September 15. Special efforts are being made to make this a record season, and to attract passengers enroute to or from the San Francisco fair.



The Routes of the Rail-Bus Tours in Glacier Park



# NEWS

## Argue M. & St. L. Plan at I. C. C.

Local towns object to shifting  
of shops; some shippers  
kick too

Oral argument on the proposal to split the Minneapolis & St. Louis into two parts in an attempt to save the road from complete abandonment was heard by the Interstate Commerce Commission on October 23. Consummation of the plan, which was outlined in the *Railway Age* of May 20, page 882, would be aided by a loan from the Reconstruction Finance Corporation. Appearing as counsel for the trustee were C. W. Wright and John C. DeMar, who argued that the present plan for setting up two separate companies to operate various portions of the system had received the approval of all the interests involved in the case and should be adopted as the only means of saving the road from total collapse and abandonment.

A. G. Cooke, who appeared as counsel for the Iowa Central First Mortgage Protective Committee, said that his group approved the plan but urged some minor changes which he felt should be made in fairness to his clients.

Opposition to the proposed plan came from F. B. Townsend, representing the Minneapolis Traffic Association and the Northwest Lumbermen's Association, and John F. Bonner, counsel for the City of Minneapolis, Minn. Mr. Townsend said that the groups that he represented were opposed to any dismemberment of the system because they felt that the division of the road into two parts would disrupt routings and reduce the quality of service that shippers on the line are now receiving.

Mr. Bonner told the commission that the City of Minneapolis was opposed to a proposal made by the R. F. C. that the shops of the road now located in Minneapolis be moved from that city to some other location. He then pointed out to the commission that a statute of the State of Minnesota provides that no round-house or shop in the State may be moved without authority first having been obtained from the Minnesota Railroad and Warehouse Commission.

Chairman Joseph B. Eastman then asked Mr. Bonner whether or not he believed a railroad should have the right to determine where it would locate its shops. Mr. Bonner did not believe it did in view of the Minnesota statute. He went on to argue that before the I. C. C. can authorize the road to move its shops from Minneapolis,

## Senator Reed to Address N. I. T. League

Senator Clyde Reed of Kansas will be the guest speaker at the annual luncheon meeting of the National Industrial Traffic League, to be held November 21 in connection with the annual meeting of the league on November 21 and 22.

the Minnesota Commission must first make a finding that the continuance of the shops in Minneapolis is so burdensome that it affects interstate commerce. He did not believe that such a finding could be made. Commissioner Aitchison criticized the attorney for his objection to the plan, pointing out that the local communities are all for keeping the railroads in sound financial condition but that every time any plan is put forth for the resuscitation of a bankrupt road, it is opposed by every local interest along the line.

Other counsel opposing the plan were Geo. Simpson of the Minnesota Commission; F. K. Gage for the City of Madison, Wis.; William Williamson for the South Dakota Public Utilities Commission; and S. W. W. Carr for various South Dakota interests.

## Missouri Pacific Gets Truck Certificates

The Interstate Commerce Commission, Division 5, has conditionally authorized the Missouri Pacific to continue common-carrier trucking operations over Illinois routes between Gorham and Cairo, between Gorham and Benton and between Gorham and Pittsburg. The conditions attached to the granting of the certificate are the usual ones calculated to restrict the highway service to that which is "supplemental of, auxiliary to, and coordinated with applicant's rail service."

## P. R. R.'s Trail Blazer Earns \$500,000 in Two Months

The Pennsylvania's all-coach, 17-hr. "Trail Blazer," running between New York and Chicago, in the first two complete months of operation, August and September, carried a total of 31,985 passengers, or an average of 524 per day, and produced a revenue in excess of \$500,000. Approximately 48,000 meals were served in its "twin unit" dining cars during the same period. The record day thus far of the train was August 19, when the eastbound and westbound trains carried a total of 1,060 passengers.

## N. & W.'s Better Service Conference

450 delegates attend session  
at Roanoke; stress needs in  
time of rising traffic

Approximately 450 delegates from every branch of railroad service in six states convened in Roanoke, Va., October 13 and 14 for the 20th annual Better Service Conference of the Norfolk & Western. Representing local Better Service Clubs located throughout the system to bring the 20,000 employees of the road together periodically to discuss problems of business-getting, local public relations and service through efficient employee functioning, the delegates heard notable speakers and themselves formed into committees to frame reports on important topics.

J. B. Baskerville, N. & W. general claim agent, and general chairman of the Conference, reported that because of a practice inaugurated by the local clubs last year of holding meetings in towns along the line where Better Service groups are not organized, the total number of people reached last year totaled some 48,000. He also reported that approximately 1,000 employees are now serving on regional committees which promote local club activities.

This year the delegates divided into four large committees, in place of 21 groups as in former years, and considered general topics, reports on which follow.

The report of the committee on service touched chiefly upon safety, health of employees, prevention of waste and employee-relations. Its advice to the employee was: "He should offer his loyal support to his employer's program of Service which is expounded in his local Better Service club. He should exercise his right of franchise, go to the polls and vote for and endeavor to elect legislators who are favorable to fair regulation of all forms of transportation systems, which will give the railroads of America a square deal." The report of the committee on business declared that "the best method of securing new business is to handle the old business in a satisfactory manner." It then enumerated the factors in effective business-getting, emphasizing especially the need of securing and holding L. C. L. traffic. "Precision transportation," it was held, best expresses the type of service that railroads must render to hold their place in the scheme of things.

The committee on fair regulation was especially concerned that the present rise  
(Continued on page 682)

## Ditch Dolees in St. Louis Session

"Never give railroads a break"  
is still policy of Miss.  
Valley socialists

The Wheeler-Lea bill pending in Congress, which would place inland waterway traffic under control of the Interstate Commerce Commission, was condemned as contrary to the public interest in a resolution passed by the Mississippi Valley Association at its twenty-first annual meeting at St. Louis, Mo., on October 16 and 17. Opposition to fixing the price of bituminous coal, as provided for under the Guffey Coal Act and administered by the Bituminous Coal division of the Interior Department, was opposed in another resolution because, it was contended, it would deprive industry and the consumer in the Mississippi valley of the economies of water transportation since the price is based on railroad freight rates. Other resolutions urged an increase in the diversion of water from Lake Michigan to provide higher water levels for the Illinois and Mississippi rivers and to meet the problem of sewage disposal; recommended trade trips to Latin America in an effort to stimulate commerce; advocated extension of a nine-foot channel to Sioux City, Iowa, and declared that war profits have no lasting benefits. Burton F. Peek, vice-president of the John Deere Company, Moline, Ill., was elected chairman of the board; Lachlan Macleay was re-elected president, and Richard S. Hawes was re-elected treasurer.

Mr. Macleay, in discussing the Wheeler-Lea bill, contended that the placing of inland waterway traffic under the jurisdiction of the Interstate Commerce Commission was a threat to both Mississippi Valley agriculture and industry. "If the restrictions proposed are forced upon us," he continued, "we will face slow strangulation of our manufacturing enterprises and commerce, increased costs in marketing our agricultural products, economic uncertainty and the final subjection of this great inland territory as a trade vassal to the Great Lakes and seacoast sections. There are certain selfish interests in the North Atlantic states and in the Great Lakes cities that have entered into a deliberate conspiracy to make the Mississippi Valley their sphere of influence and to hold this territory as a trade tributary." Congressman W. M. Whittington of Mississippi, chairman of the House Flood Control committee, while discussing the same bill, said, "The rivers and ports of the country are the property of the people of the United States. They should be preserved and kept free and open to all the people. There is no occasion for regulation. Whatever may be said of the competition among railways, whatever may be said of the corruption of railway construction and railway finance, there has been no evidence of any destructive competition among water carriers on the inland waterways."

Herman A. Bayless, general counsel for the Mississippi River System Carriers'

### Lehigh Valley Directors Meet Aboard Train

The monthly board meeting of the directors of the Lehigh Valley on October 27 was held aboard a special train which was located on lines in Pennsylvania at the time of the meeting to comply with by-laws in the company's charter which stipulate that stockholders' and board meetings must be held in the state. Executive offices of the company are located in New York.

Association, attacked the proposal of the Bituminous Coal division of the Interior Department to fix coal prices on the basis of all-rail rates as "a supreme disregard of the interests of the consuming public. The Ohio and Mississippi rivers," he said, "are natural highways of commerce which are public property, improved with public funds and available for public use to provide cheap transportation. The establishment of these proposed prices will destroy the usefulness to the consuming public of the Ohio and Mississippi valleys for the transportation by river of this important commodity."

Congressman Chester A. Thompson of Rock Island, Ill., declared that the proposal threatens to wipe out the advantages of low cost water transportation. "The very economic existence of some industrial centers located on rivers of the Middle West is seriously threatened by the proposal to establish minimum prices on soft coal. Many large industries have been built close to good coal fields because of the advantage of obtaining fuel at low cost, principally because of the small amount of transportation involved. The transportation of soft coal has reached major importance in the waterways system of the nation, as it has long been important in intercoastal shipping. If the coal industry is to survive and meet the inroads made upon it by competing forms of energy, it must be given a free hand to meet competitive conditions."

### Locomotive Sideswipes Coach

Two passengers were killed and 12 were injured when a switching locomotive sideswiped a lounge car in an eastbound Chicago-Detroit Pennsylvania passenger train in Fort Wayne, Ind. on October 24. The passenger train was approaching the station when the locomotive entered the main track from a side track.

### Would Give "Grandfather-Clause" Certificate to S. P. Affiliate

Examiner W. T. Croft has recommended in a proposed report on further hearing that the Interstate Commerce Commission grant a "grandfather-clause" certificate to the Pacific Motor Trucking Company, affiliate of the Southern Pacific, for common-carrier trucking operations between various points in California and Oregon, in some instances in direct-to-the-public service and, in others, as an auxiliary and supplementary carrier for railroads and express companies.

## 1914 No Guide For 1939 — Dunn

Some similarities but many differences cited as guide to present r. r. prospects

There are some points of similarity between conditions at the outset of the current war in Europe and that which began 25 years ago—but there are also a lot of important differences too, and these differences need to be taken into account along with the similarities in trying to forecast what lies ahead. Such was the warning sounded by Samuel O. Dunn, editor of *Railway Age*, at a meeting of the New York Railroad Club on October 19.

General business was on the mend in this country when the present war started; in 1914 it was on the downgrade. Nobody talked about the chance of the United States becoming involved when the last war started; this time everybody is on the alert at such a threat. The railroads did not increase their purchases of equipment and materials at the beginning of the last war in prospect of increasing demands on their facilities, as they are doing now; instead, they curtailed such purchases.

It is important for business men, including railroad managers, to know, the speaker continued, whether or not the present expansion in business will continue, and how great it will become. It is also important for them to know whether it is likely to become too great for the railroads to handle successfully. While disclaiming a desire to forecast, the speaker said business men cannot avoid forecasting—because they are bound to act in one way or another, and the way they act indicates the things which they expect will happen. Business men, in short, do their forecasting by deeds rather than by words.

Business has expanded since the onset of the present war, instead of contracting as it did immediately following the outbreak of hostilities in 1914, in the speaker's opinion, for three reasons to wit:

1. The probability of the present war had been discounted in advance.
2. Business was on the upgrade before the war began (as it was not in 1914), and this movement has persisted.
3. Business men remember that the last war brought increased business, and they are discounting now the probability that the present one will do the same.

The speaker does not look for a persistent large increase in business at this time (he cited figures indicating that the upsurge is already decelerating). Continued healthy improvement in business may be expected if America will take steps to solve some of her pressing domestic problems, including the transportation problem. But no great boom in war orders for American industry is in sight, in the speaker's opinion, because there is a definite limit to the amount of money the belligerent nations have to spend. These nations appear to have about 7 billion dollars which they could spend here, but, spread out over three or four years, this would add only 2 or 3 per cent to our



national income—hardly enough to cause a great boom.

There are, he continued, business opportunities for American manufacturers (particularly in the supply of railway materials) in the countries which usually buy such supplies in Europe—but, far and above any trade with foreign nations whatsoever, the important source for improved business remains the domestic market; and that market will improve in measure as sound policies are adopted toward domestic economic problems. (The kind of policies which need to be adopted, and those which need to be discarded, if prosperity is to return to America, are discussed by the speaker in the leading editorial in this issue of *Railway Age* in more detail than he outlined them in his address).

He favored making America strong in a military sense—but emphasized that modern war is largely economic; and that a nation cannot be stronger than its economic system. Ours is anaemic at the present time, for one reason, because our policy-makers have been artificially handicapping mass-production (i.e., economical) transportation, and fostering a return to handicraft transport methods. This is no way to prepare either for a successful war or for peaceful prosperity.

The railroads last May calculated that they could handle a 25 per cent increase in traffic with existing equipment in its existing condition, and a 45 or 50 per cent increase if existing equipment were repaired. This was a conservative estimate, because carloadings have already increased 40 per cent over those of last May, and extensive repair programs have only recently got under way. The railroads, in the speaker's opinion, should be able to handle maximum carloadings of perhaps as high as 950,000 without serious car shortage.

Attention was called to a statement made editorially in *Railway Age* of September 2, in which it was estimated that the railroads would need 2,400 locomotives and 300,000 more freight cars than they now have if business should increase 40 per cent (as it did in the last war) over the level of business at the time that editorial was written. "I still stand by that estimate," the speaker said, pointing out that it is not out of line with the railroads' own estimate made last spring. (No authoritative calculation was made by the railroads indicating that they could handle an increase of 45 or 50 per cent over the September traffic level without additional equipment—those estimates applied to the traffic level obtaining last spring.)

Speaking from personal experience in service of the Railroads' War Board, Mr. Dunn declared emphatically that the so-called "break-down" of the railroads in the last war was a failure by government rather than by railway management. When the railroads tried to clear up traffic congestion, the government threatened to prosecute them under the Sherman act. Government freight was loaded on cars, tying them up, when there was no prospect of unloading them. At that, the railroads were much better operated in 1917 under private management when they had allegedly "broken down" than they were

### August Net Income Was \$10,053,000

Class I railroads for August had a net income after fixed charges of \$10,053,000 as compared with a net deficit of \$1,181,000 in August, 1938, according to the Association of American Railroads. For this year's first eight months the net deficit after fixed charges was \$74,647,000 as compared with a red figure of \$182,725,000 for the comparable 1938 period.

in 1918 under government management. If the railroads are given a reasonable opportunity to earn a living for themselves under conditions of peace, and if they are reasonably treated by the government when and if a national emergency should arise, there is no danger of any "break down" which would justify a resort to government operation.

### Motor Carriers Brought Into Probe of "All-Freight" Rates

The Interstate Commerce Commission has issued a corrected order in its No. 28323 investigation of "all-freight" rates from Chicago and Mississippi river and Ohio river crossings, broadening the proceeding to cover "all-commodity" rates of motor carriers as well as those of the railroads, and including common carriers by motor vehicle among the respondents. The commission's original order in this case was reviewed in the *Railway Age* of September 16, page 422.

### Western Roads Reduce Round Trip Fares

The Trans-Continental Western Passenger Association announced, on October 25, that effective December 15 the Western railroads would reduce round-trip coach fares approximately 5 per cent, from 1.9 cents a mile to 1.8 cents per mile. Hugh W. Siddall, chairman of the association, stated that the reduction was for the purpose of stimulating passenger travel by rail during the holiday season but added, "We are hopeful that public response to this offer will result in this lower rate being made permanent."

### Pelley Pays White House Call, Reports R. R.s Ready

J. J. Pelley, president of the Association of American Railroads, on October 23 paid a brief visit to the White House and discussed with President Roosevelt the general business situation and railroad preparedness to handle any anticipated traffic increase. Mr. Pelley told reporters that he had called the President's attention to the recent rise in carloadings from 805,733 cars for the week ended September 16 to 844,955 cars for the week ended October 19, pointing out that this traffic had been handled without complaint of car shortages.

The total of 844,955 cars for the October 19 week was the highest reported since the week ended November 15, 1930;

and Mr. Pelley noted that it stepped up current traffic to approximately the level of business handled in 1918, the last year of the World War. Pointing out that there were higher weekly totals in 1918, the A. A. R. president nevertheless calculated that a weekly average of 844,955 cars would produce a 43,900,000 car year as compared with the 44,000,000 cars loaded in 1918. Mr. Pelley also reiterated previous statements to the effect that the railroads will be able to meet any situation which arises.

### Frisco Motor Carrier Affiliate Would Acquire Lines

The Frisco Transportation Company, a motor carrier affiliate of the St. Louis-San Francisco, has asked the Interstate Commerce Commission for authority to purchase the motor carrier operation of T. N. Bennett, doing business as the Bennett Truck Line, of Paragould, Ark. At the same time the company asked authority to purchase the motor carrier operation of the Ozark Truck Lines, Inc., of Springfield, Mo. In an accompanying application the Transportation Company asked temporary authority to acquire and operate the Ozark Lines pending a determination of the application by the commission.

### Club Meeting

The Indianapolis Car Inspection Association will hold its next meeting on November 6 at the Hotel Severin, Indianapolis, Ind.

### Railways Win "Agreed Charge" Dispute

Canada's Board of Transport Commissioners has approved the establishment of "agreed" charges by the Canadian National and Canadian Pacific for the movement of petroleum products from Calgary, Alta., to points in Alberta and Saskatchewan.

The agreement involves the Imperial Oil Company and the McColl Frontenac Oil Company. It is the fourth agreement approved by the board under the agreed charges legislation passed by Parliament at the last regular session.

Application for approval of the rates was made in July. Formal objection was filed by the Lion Oil Limited of Calgary and the Transport Commission sat in Calgary October 2 to hear the case.

The board's order will include the North Star Oil and the Alberta Highway Refiners, as well as the two companies previously mentioned.

### New Rockets Go Into Service November 12

The Rocky Mountain Rockets, being constructed by the Edward G. Budd Manufacturing Company for the Chicago, Rock Island & Pacific, will be placed in service between Chicago and Denver on November 12. On November 5, one of the trains will carry a group of representatives of Eastern railroads to Starved Rock State Park near Utica, Ill. and return, while on the following day it will begin a six-day 2,200-mile tour of the four states it will service. It will be exhibited in Chicago, Peoria, Moline, Rock Island, Davenport,

Iowa, Iowa City, Des Moines, Omaha, Neb., Lincoln, Colorado Springs, Colo. and Denver.

### Southern Governors Plan Extended Campaign on Freight Rates

The governors of eleven southern states at a meeting held at Atlanta, Ga., on October 11 voted to invite other areas to join in their fight for a revamp of the freight rate structure which they claim now favors Official territory at the expense of Southern and Western territories. The members of the regulatory commissions of the states represented were handed the task of working out the procedure for an extended campaign for rate revision before the Interstate Commerce Commission.

Proceedings involving South-North inter-territorial rates on a limited number of commodities are at present before the Commission in the so-called Southern Governors rate complaint—No. 27,746, State of Alabama et al. v. The New York Central Railroad Co., et al. The proposed report of the commission examiners was favorable to the South's point of view, as was reported in the *Railway Age* of March 4, page 389.

### Corrections

In the October 14 issue of the *Railway Age* it was stated that the Royal Blue of the Baltimore & Ohio handles approximately 5,000 passengers annually. The correct figure should have been approximately 115,000 passengers annually handled by this train. In the same issue, the City of San Francisco was referred to as a Union Pacific train. These references should have given credit for joint ownership of the train to the Chicago & North Western and the Southern Pacific as well as the Union Pacific.

### Second "Mercury" Goes into Service November 12

Upon completion of its public showing, which began on October 10, the second Mercury, constructed by the New York Central at its Beech Grove shops, as described in the *Railway Age* of October 14, will be placed in service on November 12. Upon the inauguration of the second Mercury, both Mercuries will provide daily service between Chicago and Cleveland on a schedule of 4 hr. and 45 min. for the 283½ miles between Chicago and Detroit. One Mercury will leave Chicago at 9 a. m.



Movable Chairs Are Used in the Parlor-Observation Car of the Mercury

Central time and will arrive in Detroit at 2:45 p. m. Eastern time. After cleaning, it will leave Detroit at 5:30 p. m. and will arrive in Cleveland at 8:20 p. m., the latter being the schedule upon which Mercury No. 1 has operated since 1936. The other Mercury will leave Cleveland at 7:45 a. m., will arrive in Detroit at 10:35 a. m., will leave Detroit at 1 p. m., and will arrive in Chicago at 4:45 p. m. Central time.

### Catching Up with Scott Bros. Decision

Catching up with the doctrine of the Scott Bros. case, the Interstate Commerce Commission, Division 5, has reversed a previous decision with a finding that train-connection motor coach services conducted by the Santa Fe Transportation Company for the Atchison, Topeka & Santa Fe between San Francisco, Calif., and Emeryville, via the San Francisco-Oakland Bay bridge, are not subject to regulation under the Motor Carrier Act.

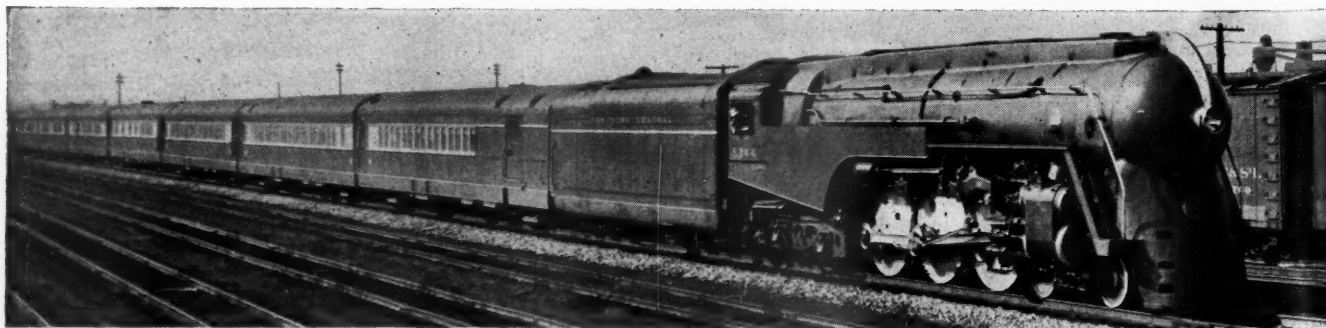
In its original decision in the case Division 5, following its own decision in the Scott Bros. case, had found the operation to be that of a contract carrier by motor vehicle for which the applicant should be granted a permit. It reopened the case after the entire commission reversed the Division's Scott Bros. decision with its finding that collection and delivery service was an integral part of railroad service and

as such was subject only to Part I of the Interstate Commerce Act.

### Intercoastal Water Rates

The United States Maritime Commission has found justified certain westbound commodity rate reductions proposed by intercoastal water carriers, but it rejected commodity-rate cuts based on proposed lower class rate levels which latter were disapproved because of "their drastic nature and because the evidence introduced was not sufficiently convincing of the need thereof."

In the proceeding (Docket No. 536, Westbound Carload and Less-Than-Carload Rates) schedules filed by intercoastal carriers to become effective June 15, 1939, proposed reductions in westbound class rates on Classes 1 to A, inclusive; also reductions in westbound less-than-carload and any-quantity commodity rates to the level of the carload rates applicable from Atlantic coast ports via water-rail routes and from Chicago via all-rail routes. Other proposed adjustments include the establishment for the first time of any-quantity rates on a number of commodities which in the past have not moved in volume, reductions in carload commodity rates when such rates now being charged are higher than the maximum class rates sought to be established or higher than the proposed less-than-carload commodity rates, and other incidental adjustments. The operation of the schedules had been suspended



Mercury No. 2 Is Hauled by a Hudson Type Locomotive



until October 15, 1939. The report of the commission stated that, with the retention in part of the existing class rate level in respect to articles rated lower than Class A, the reductions proposed would result in abnormal rate relationships and in violations of section 16 of the Shipping Act, 1916.

### Eastern Roads to Take Same Space at New York Fair Next Year

The Eastern President's Conference, at a meeting held in New York on October 19, decided to take the same space at the New York World's Fair next year that it occupied this year,—17½ acres, or the largest single industrial exhibit area on the fair site. It is expected that announcements as to whether next year's features are to follow the general lines of the 1939 exhibit will be forthcoming shortly.

At the same meeting, George D. Brooke, president, Chesapeake & Ohio, New York, Chicago & St. Louis and the Pere Marquette, was nominated by the Conference for membership on the board of the Association of American Railroads to represent the Eastern carriers in place of C. E. Denney, who recently left the Erie to head the Northern Pacific. Mr. Brooke and A. N. Williams, chairman and executive vice-president, Lehigh Valley, were named to the Conference's Committee on Public Relations. Mr. Williams succeeds D. J. Kerr, president, Lehigh Valley, as chairman of the committee.

### Pioneering Work Still to be Done in Administration of Motor Carrier Act

Continued widespread irregularities among motor carriers, including failure to show rates in proper tariffs, failure to issue proper bills of lading and the giving of rebates is and will continue to be the major problem in administering the motor carrier act, according to Clyde B. Aitchison, chairman of Division 2 of the Interstate Commerce Commission, in a luncheon address at the annual convention of the American Trucking Associations, Inc., at Chicago on October 24. The administration of the act, he said, has been tempered with sympathy for the motor carriers who have come under federal regulation for the first time. The I. C. C. has enforced the law as Congress has written it and special favors to any particular class simply are without the purview of the act, he continued. While progress has been slow, much has been accomplished, and as a result the United States has gone as far as any country in the development of co-ordinated systems of transport. While regulation controls uniformity in rates and capitalization, other phases that will be stressed in the future include safety of operation and a greater control of the actions of individuals within the industry.

### Bus Business Increase Continues to Out-distance Railroads

Class I motor carriers of passengers reported July revenues of \$12,621,578, as compared with \$10,950,412 for July, 1938, an increase of 15.3 per cent, according to the monthly compilation prepared by the Interstate Commerce Commission's Bureau

of Statistics from 148 monthly reports representing 149 bus operators. Passengers carried increased 12.8 per cent, from 11,315,750 to 12,766,635. (Railroad passengers carried, excluding commutation, were up

tive, highway, rail and marine transportation. Simultaneously, a series of round table discussions will deal with specific 1939 achievements in the respective fields, including light weight alloys, high strength

	Passenger Revenue		Passengers Carried	
	July, 1939	July, 1938	July, 1939	July, 1938
New England Region .....	\$743,526	\$595,476	1,158,862	1,040,179
Middle Atlantic Region .....	2,395,836	1,875,462	3,194,644	2,710,222
Central Region .....	2,314,218	1,803,000	1,950,685	1,735,968
Southern Region .....	2,319,974	2,282,271	2,606,118	2,333,925
Northwestern Region .....	554,788	505,035	379,320	362,764
Mid-Western Region .....	1,055,525	971,465	566,917	544,925
Southwestern Region .....	1,390,021	1,317,372	1,314,708	1,228,087
Rocky Mountain Region .....	178,239	157,863	107,435	105,410
Pacific Region .....	1,669,451	1,442,468	1,487,946	1,254,270

about 10 per cent in July—and revenues from passengers, excluding commutation, were up less than 9 per cent.)

The breakdown of the bus revenue and traffic figures by regions is given in the accompanying table.

### July Accident Statistics

The Interstate Commerce Commission's completed statistics of steam railway accidents for the month of July, 1939, now in preparation for the printer, will show:

Item	Month of July 1939	Month of July 1938	7 months ended with July 1939	7 months ended with July 1938
Number of train accidents .....	465	456	3,213	3,155
Number of casualties in train, train-service and nontrain accidents				
Trespassers:				
Killed .....	262	273	1,309	1,300
Injured .....	274	274	1,382	1,423
Passengers on trains:				
(a) in train accidents*				
Killed .....	—	—	1	44
Injured .....	157	47	331	287
(b) In train-service accidents				
Killed .....	—	1	5	11
Injured .....	199	141	979	1,066
Travelers not on trains:				
Killed .....	2	3	5	5
Injured .....	70	49	472	424
Employees on duty:				
Killed .....	31	34	268	268
Injured .....	1,406	1,354	9,262	8,948
All other nontrespassers:**				
Killed .....	107	115	841	859
Injured .....	360	398	2,907	3,125
Total—All classes of persons:				
Killed .....	402	426	2,429	2,487
Injured .....	2,466	2,263	15,333	15,273

\* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former cause damage of more than \$150 to railway property.

\*\* Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties for all classes of persons, including both trespassers and nontrespassers, were as follows:

Number of accidents.	200	215	1,805	1,866
Persons:				
Killed .....	94	105	77	801
Injured .....	222	226	2,068	2,188

### Conference on New Technologies in Transportation to Be Held

A three-day conference on new technologies in transportation will be held in Ann Arbor, Mich., on November 1 to 3, under the joint sponsorship of the University of Michigan and Life magazine. The conference is designed to examine new methods, new materials and new directions in the transportation field, dealing with aspects of engineering, metallurgy, thermodynamics, structure, tensile strength, speed and capacity in the fields of air, automo-

steels, protective coatings, welding for transportation, combustion, plastics, high temperature cooling and lubrication, new efficiencies in the use of fuel, high pressure lubricants and vibration control.

Speakers will include F. G. Gurley, executive vice-president of the Atchison, Topeka & Santa Fe; Charles F. Kettering, vice-president in charge of research of the General Motors Research Corporation; Dr. Richard M. Wick, research engineer of the Bethlehem Steel Company; C. R. Smith, president of the American Air Lines, Inc.; Fred M. Zeder, vice-chairman of the board of the Chrysler Corporation; Otto F. Schairer, vice-president in charge of patents of the Radio Corporation of America; D. A. Wallace, president of the Chrysler Sales Corporation, Dr. Gustav Egloof, director of research of the Universal Oil Products Company; and Dr. Merrell R. Penske, director of the Petroleum Refining Laboratories, Pennsylvania State College.

### Hawley Appointed Assistant Director of Bureau of Safety

James S. Hawley, attorney in the Interstate Commerce Commission's Bureau of Safety, has been appointed assistant director of the Bureau, succeeding Shirley N. Mills whose promotion to director was noted in the *Railway Age* of October 21, page 631. Except for wartime service with the Army in France, Mr. Hawley has been with the Bureau of Safety since 1912, having then entered I. C. C. service after 12 years of railroading on the New York, New Haven & Hartford.

Born January 6, 1881, at Hawleyville, Conn., Mr. Hawley attended grade and high schools at that place and entered railroad service in 1900 as a telegraph operator with the New Haven. In 1903 he was promoted to train dispatcher and in 1909 he became transportation inspector. One year later Mr. Hawley was promoted to train rules examiner, the position which he held until February 1, 1912, when he entered the employ of the I. C. C., being assigned to the Bureau of Safety as an hours of service inspector. Continuing in that position Mr. Hawley entered Georgetown University Law School in 1915; but his legal studies, interrupted by the war, were not completed until 1921. Meanwhile there came his 1917-1919 service in France with the Fourteenth Engineers (Ry.), successively as first lieutenant, captain and major.

Mr. Hawley returned to the Bureau of

Safety in September, 1919, and on January 1, 1923, he became chief of the Bureau's Accident Investigation Section. He was promoted to attorney on June 1, 1925, remaining in that position until his present appointment as assistant director.

### Freight Car Loading

Loading of revenue freight for the week ended October 21 totaled 861,198 cars, the highest for any week since 1930, the Association of American Railroads announced on October 26. This was an increase of 16,243 cars, or 1.9 per cent, above the preceding weeks, an increase of 155,914 cars, or 22.1 per cent, above the corresponding week in 1938, and an increase of 91,042 cars, or 11.8 per cent, above the same week in 1937.

As reported in last week's issue, the loadings for the previous week ended October 14, totaled 844,955 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings			
For Week Ended Saturday, October 14			
Districts	1939	1938	1937
Eastern .....	170,055	147,300	162,362
Allegheny .....	172,133	128,316	151,760
Pocahontas .....	63,523	53,538	55,749
Southern .....	116,714	107,554	113,158
Northwestern ..	134,142	104,780	124,832
Central Western.	130,786	127,767	135,202
Southwestern ...	57,602	56,837	63,032
<b>Total Western Districts ....</b>	<b>322,530</b>	<b>289,384</b>	<b>323,066</b>
<b>Total All Roads.</b>	<b>844,955</b>	<b>726,142</b>	<b>806,095</b>
Commodities			
Grain and grain products .....	38,793	43,204	35,416
Live stock .....	21,391	22,657	21,830
Coal .....	170,168	136,885	159,732
Coke .....	11,583	6,069	9,520
Forest products..	38,432	32,571	37,083
Ore .....	66,059	30,737	50,139
Merchandise I.C.I.	160,683	160,053	169,636
Miscellaneous ..	337,844	293,966	322,739
<b>October 14.....</b>	<b>844,955</b>	<b>726,142</b>	<b>806,095</b>
<b>October 7.....</b>	<b>834,694</b>	<b>702,616</b>	<b>812,258</b>
<b>September 30...</b>	<b>834,640</b>	<b>696,908</b>	<b>843,861</b>
<b>September 23...</b>	<b>814,828</b>	<b>669,704</b>	<b>836,885</b>
<b>September 16...</b>	<b>805,733</b>	<b>660,163</b>	<b>822,795</b>

Cumulative Total,  
41 Weeks ... 26,105,316 23,567,913 30,764,303

**In Canada.**—Total carloadings for the week ended October 14 totaled 60,079, as against 56,815 last year and 68,594 in the previous week (the decrease from the previous week being affected by the Thanksgiving holiday), according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
<b>Total for Canada:</b>		
Oct. 14, 1939.....	60,079	27,864
Oct. 7, 1939.....	68,594	28,607
Sept. 30, 1939.....	68,882	30,476
Oct. 15, 1938.....	56,815	22,011

<b>Cumulative Totals for Canada:</b>		
Oct. 14, 1939.....	1,959,146	913,417
Oct. 15, 1938.....	1,905,061	830,981
Oct. 16, 1937.....	2,067,556	1,085,281

### N. J. Directs Tax Action Against Railroads

New Jersey railroads have been notified that State Attorney General D. T. Wilentz will apply on November 2 to the state Supreme Court for judgments against certain carriers for \$9,240,196 in back taxes for 1932 and 1933 and more than \$7,000,000 in penalties based on a 12 per cent annual interest rate for unpaid state levies. By

reason of the proceedings which may be initiated the carriers concerned are subject to seizure of certain saleable or usable properties by the state, which collects all second-class railroad taxes, or by municipalities to whom a portion of the tax receipts are paid.

All railroads operating in New Jersey, with the exception of the Pennsylvania, have been withholding a portion of each year's state tax levy as it falls due (generally 40 per cent) and appealed from the levies through the state Board of Tax Appeals and state and federal courts. The Lehigh Valley and the Central of New Jersey withheld payment of a portion of taxes for both 1932 and 1933, while the New York Central, Erie and the Delaware, Lackawanna & Western owe a portion of their 1933 taxes.

The United States Supreme Court on March 13 denied petitions of the carriers for a review of a decree of the U. S. Circuit Court of Appeals for the third circuit which upheld the state with respect to levies for 1932 and 1933 in a decision dated November 15, 1938; it is the state taxes involved in this decision which the attorney general will seek to force the roads to pay.

President E. W. Scheer of the Central of New Jersey has already indicated that collection of the taxes will permit no alternative but a petition by the road for protection of the courts under Section 77 of the Federal Bankruptcy Act.

### Acme Seeks to Stay I. C. C. Orders

The United States District Court for the Southern District of New York has set November 9 as the date for hearing on the bill of complaint whereby Acme Fast Freight, Inc., and numerous motor carriers are seeking annulment of Interstate Commerce Commission orders in the case involving the status of Acme. The orders assailed are those denying Acme's application for a certificate as a common carrier by motor vehicle, with a holding that forwarders, common carriers at common law, are left unregulated under the Motor Carrier Act, and ordering forwarder tariffs naming "what purport to be joint rates between forwarding companies and numerous motor carriers" stricken from the commission's files.

In the former connection the bill of complaint asks that the court issue a mandatory injunction forcing the commission to assume jurisdiction over Acme with respect to operations performed indirectly in the vehicles of others. The second prayer is to the effect that the commission be required to receive the forwarder tariffs. In view of the institution of the court proceedings the commission has postponed the effective date of the tariff order from October 25 until November 25.

After outlining the proceedings before the commission, the bill of complaint sets forth the charge of the "forwarder plaintiffs" that the order denying Acme common-carrier status under the Motor Carrier Act "is unlawful and void, and is based upon the erroneous supposition and finding of a lack of power upon the part of the commission . . ." which "is contrary to law and the evidence." Continuing, the

complaint makes for "all plaintiffs" the charge that the tariff order "is unlawful and void in that it is arbitrarily based" upon rulings and conclusions which are "erroneous and contrary to the undisputed evidence. . . ." Cancellation of the joint rate arrangements, it is later claimed, "will greatly and irreparably injure plaintiffs and their businesses in an amount not less than ten million dollars."

The commission's decision on Acme's status was reviewed in the *Railway Age* of July 23, 1938, page 166, while the supplemental report with its order striking forwarder tariffs from I. C. C. files was reported in the issue of August 12, page 262.

### Unemployment Insurance Decisions

Receipt of city welfare payments does not bar a claimant from railroad unemployment insurance benefits, if he is not required to perform some service in return for the relief payment, according to a recent decision by the Railroad Retirement Board under the Railroad Unemployment Insurance Act. "When no services are required to be performed by persons receiving city welfare payments, such payments are not remuneration within the meaning of Section 1 (j) of the Railroad Unemployment Insurance Act since they are not pay for services for hire," the decision states.

Benefits under the Unemployment Insurance Act are not limited to employees who are citizens of the United States, another decision of the Board points out. Section 1 (e) of the Act provides that individuals not citizens or residents of the United States are not to be deemed in the service of an employer when rendering service under certain conditions, outside the United States. This provision, however, does not apply to an alien whose railroad service was performed in the United States. The same decision holds that receipt of a foreign naval pension does not disqualify a claimant from receiving unemployment insurance benefits.

Whether or not employment with the WPA or the PWA is suitable work, as defined under the Railroad Unemployment Insurance Act, depends upon the facts of the particular case, and work is not unsuitable simply because it is with one of these agencies, in the opinion of the general counsel of the Retirement Board.

The new appropriation for the WPA for the fiscal year 1940, the general counsel points out, has abandoned the prevailing wage provisions of the previous appropriation and has set a requirement of 130 hours of work per month for all WPA workers with no increase in the monthly pay. Also, the monthly earnings schedule cannot be varied for workers of the same type in different geographical areas except for a cost of living differential.

"Although each situation will necessarily be determined on its own particular facts," the counsel states, "the wages of a WPA worker, whose hours of work are increased by the 130-hour provision or whose wages are lowered by the provision limiting the differential for the same type of work, will presumably become less fa-



avorable to the employee than that prevailing for similar work in the locality. However, while the differential provision may lower the monthly earning schedule in many areas it may raise it in others. The result may be that in some cases the raise in hours will be compensated for by the raise in the monthly earnings schedule."

The question of whether or not such work will be considered suitable work is therefore dependent upon the facts of the particular case.

A further opinion of the General Counsel with regard to WPA work declares that the days on which WPA employees do not work may be counted as days of unemployment for the purposes of the Railroad Unemployment Insurance Act, since the earnings of WPA workers are attributable exclusively to the days on which they work and no part of them can be attributed to days on which they do not work.

### "Stop-Off" Cars May Be Placed Originally at "Stop-Off" Points

The Interstate Commerce Commission has approved amendments to Delaware, Lackawanna & Western, Wabash and Lehigh Valley stop-off arrangements whereby those roads will be authorized to furnish an empty car at an intermediate point and load therein additional freight which would otherwise be loaded in a car of the same consignment from the origin point if stopped at the intermediate point to complete loading. This practice of placing a car originally at an intermediate point and billing it as a "stop-off" car was among those condemned in the commission's report on its Freight Forwarding Investigation, and the present decision reiterates such condemnations.

The majority report, by Commissioner Porter, goes on, however, to assert that "the schedules here considered are in themselves not objectionable, for plainly they promote economy in operation by avoiding the needless hauling of empty cars between the billing point and the intermediate stop-off point, and accordingly we see no sufficient reason for condemning them. Most of the wasteful practices above referred to are the outgrowth of the promiscuous-loading rule and the multiple-car rule as applied by respondents, and these rules are not here in issue."

Chairman Eastman noted his concurrence in the conclusions reached, but "not in much of the discussion which precedes the conclusions." Commissioners Mahaffie and Splawn agreed with him, while Commissioner Caskie filed a dissenting opinion, asserting that "the real question here is whether we should by finding the schedules justified, make it easier for respondents to continue the condemned practices." He was unwilling to give such practices "the sanction implied by such approval." At another place in his dissent Mr. Caskie had called it "mere sophistry to say that the proposed amendatory parts of the stop-off rules 'in themselves are not objectionable' because they will enable respondents to avoid some needless hauling of empty cars under a semblance of legality while they continue to flout the underlying purpose of legitimate stop-off practices." Com-

missioner Patterson did not participate in the disposition of the case which was docketed as I. & S. No. 4613.

### A. A. R. Car-Truck Tests Completed

Tests under actual operating conditions to determine what improvements can be made in the construction of railroad car trucks to enable them to meet with still greater safety, further increases in the speed of freight trains were completed by the Association of American Railroads last week, according to an October 23 announcement. The engineers in charge of these tests are now engaged in correlating the data and expect to have a final report completed early in 1940.

These tests, the most comprehensive of their kind ever conducted by the railroads, began last April and since that time more than 70 test runs at speeds as high as 85 miles per hour were made on the Pennsylvania between Altoona, Pa., and Lock Haven, a round trip distance of about 150 miles.

Twelve different types of trucks were used in the tests which were made under varying speed, load, weather and operating conditions. In order to determine their qualities or defects, each truck was submitted to a series of separate test runs under a standard freight car which was part of a train containing electrical recording devices, gauges and other paraphernalia designed to record each impulse of the truck under different speed and load conditions.

Simultaneously tests also were made for the purpose of determining the impact effects on the track of the various makes of trucks. In order to do this an elaborate system of electrical devices was set up along the track to register the impact blows delivered by the wheels of the trucks passing over the rails.

In the past 18 years, the A. A. R. statement points out, there has been an almost constant increase in the average speed of trains with the result that in the first half of 1939, the average speed between terminals was 64 per cent greater than in 1920. As a matter of fact, many freight trains now operate on what formerly were passenger train schedules.

The road tests which have just been completed were conducted under the general direction of W. I. Cantley, Mechanical Engineer, Mechanical Division of the Association of American Railroads. W. E. Gray, Engineer of Draft Gear Tests was in direct charge of the road tests. G. M. Magee, Research Engineer of the Engineering Division was in general charge of the track impact tests.

### Advisory Boards to Meet in Chicago

The annual meeting of the National Association of Advisory Boards will be held at the Palmer House in Chicago on October 31 and November 1.

The docket is as follows:

"Why We Are Here"—Charles Donley, president.

Report of National Secretary, A. W. Vogtle, manager traffic and sales, DeBardeleben Coal Corporation, Birmingham, Ala.

#### The Legislative Situation

Discussion by—R. V. Fletcher, vice-president, Association of American Railroads.

H. R. Brashear, manager transportation department, Los Angeles Chamber of Commerce, Los Angeles, Cal.  
L. F. Orr, general traffic manager, Pet Milk Company, St. Louis, Mo.

#### Adequacy of Railroad Service and Equipment

Discussion by—J. J. Pelley, president, Association of American Railroads.  
M. J. Gormley, executive assistant, Association of American Railroads.  
R. C. Ross, vice-president and secretary, Joseph T. Ryerson & Son, Chicago, Ill.  
Gordon Tongue, secretary-treasurer, Superior Portland Cement, Inc., Seattle, Wash.

#### The Shippers and Receivers Part in Promoting Efficient Car Utilization

Discussion by—L. D. Owen, vice-president, Westland Warehouses, Inc., Los Angeles, Cal.  
E. C. Jepsen, general traffic manager, Wheeling Steel Corporation, Wheeling, W. Va.  
C. A. Lahey, vice-president, Quaker Oats Company, Chicago, Ill.  
W. C. Kendall, chairman, Car Service Division, Association of American Railroads.

#### Simplification of Freight Tariffs

Discussion by—Carl Giessow, director of Traffic, St. Louis Chamber of Commerce, St. Louis, Mo.  
W. J. Kelly, assistant to vice-president, Association of American Railroads.

#### Second Day

#### Freight Loss and Damage Prevention—Summary of Perfect Shipping Month

Discussion by—T. C. Burwell, vice-president, A. E. Staley Manufacturing Company, Decatur, Ill.  
O. W. Galloway, commercial agent, Pillsbury Flour Mills, Minneapolis, Minn.  
C. H. Dietrich, executive vice-chairman, Freight Claim Division, Association of American Railroads.

#### The Mechanics of Advisory Board Procedure

Discussion by—A. M. Stephens, traffic manager, Standard Oil Company, Louisville, Ky.  
J. K. Hiltner, traffic manager, U. S. Pipe & Foundry, Burlington, N. J.  
C. H. Conaway, secretary, Farmers Grain Dealers Association, Fargo, N. D.  
W. B. Shepherd, assistant general traffic manager, Aluminum Company of America, Pittsburgh, Pa.  
A. F. McSweeney, superintendent freight transportation, Pennsylvania, Chicago, Ill.

#### Liberalization of Demurrage Rules

Discussion by—L. P. Siddons, traffic manager, Holly Sugar Corporation, Colorado Springs, Colo.  
G. C. Randall, chairman, General Committee, Operating—Transportation Division, Association of American Railroads.

#### Progress in Expanded Activities for Advisory Boards

Discussion by—G. H. Shafer, general traffic manager, General Timber Service, Inc., St. Paul, Minn.  
L. G. Hults, traffic manager, United Engineering & Foundry, Pittsburgh, Pa.  
M. A. Keith, general traffic manager, International Stacey Corporation, Columbus, Ohio.  
W. A. Schoenfeld, dean, Oregon State College, Corvallis, Ore.  
A. F. Cleveland, vice-president, Association of American Railroads.

#### Special Committee Reports

- Resolutions—G. F. Hichborn, general traffic manager, U. S. Rubber Company, New York, N. Y.
- By-Laws—R. M. Nielson, general traffic manager, William Volker Company, Kansas City, Mo.
- Nominating—J. E. Bryan, traffic manager, Wisconsin Paper & Pulp Manufacturers Traffic Association, Chicago, Ill.

#### New Business

### Supply Men Exhibit at B. & B. Convention

Thirty-one manufacturers of equipment and materials used in the construction and maintenance of railway bridges, buildings and water service facilities, under the auspices of the Bridge and Building Supply Men's Association, presented an exhibit

of their products in connection with the convention of the American Railway Bridge and Building Association at the Hotel Stevens, Chicago, on October 17-19. The officers of the Supply Association who arranged for and were responsible for the exhibit, which was held in the exhibition hall immediately adjacent to the convention room, were: President, K. T. Batchelder, president, Standard Heater & Insulation Company, Chicago, and manager railroad sales, Insulite Company, Chicago; treasurer, Harry A. Wolfe, assistant manager railroad sales, The Lehon Company, Chicago; secretary, W. S. Carlisle, representative, National Lead Company, Chicago; honorary director, L. F. Flanagan, representative, Detroit Graphite Company, Chicago; and the following members of the executive committee—E. E. Thulin, representative, Duff-Norton Manufacturing Company, Chicago; C. C. Rausch, representative, Dearborn Chemical Company, Chicago; Geo. E. Morrow, sales manager, Reade Manufacturing Company, Inc., Chicago; G. W. Anderson, representative, Patterson-Sargent Company, Chicago; C. E. Ward, representative, U. S. Wind Engine & Pump Company, Batavia, Ill.; and A. J. Filkins, president, Paul Dickinson, Inc., Chicago.

In the election of officers for the ensuing year, Mr. Wolfe was elected president; Mr. Rausch was elected vice-president; H. M. Winandy, assistant manager railway sales, Celotex Company, Chicago, was elected treasurer; and Mr. Carlisle was re-elected secretary. The new directors elected were: F. A. McGonigle, manager railway sales department, Mall Tool Company, Chicago; P. R. Austin, representative, Johns-Manville Sales Corporation, Chicago; and Ross Clarke, representative, Massey Concrete Products Corporation, Chicago.

A list of the exhibitors, together with the products on exhibit and the names of their representatives, follows:

Air Reduction Sales Co., New York; acetylene welding outfit—C. B. Armstrong, J. Callahan, C. Daly, F. Huggins, J. Kenefic and J. G. Magrath. American Lumber & Treating Co., Chicago; samples of Wolmanized timber and illustrations of its use—Robert R. Clegg and R. B. Putman.

Armco Railroad Sales Co., Middletown, Ohio; samples of Armco pipe and illustrations of applications—R. Y. Barham, E. T. Cross and E. Harbeck.

Barker Mail Crane Co., Clinton, Iowa; mail crane—L. P. Barker and S. N. Robb.

Buda Co., Harvey, Ill.; motor car; bridge and track jack; tool grinders; gasoline power plant—R. M. Blackburn, R. B. Fisher and F. L. Gormley.

Celotex Corp., Chicago; insulation, wallboard; cold storage insulation; interior finish—J. H. Bracken, W. S. Millener and H. A. Winandy.

Construction Machinery Co., Waterloo, Iowa; concrete mixers; water pumps; electric saws; electric drill—A. V. Gibbs, A. H. Nelson, G. A. Loveall and L. W. Swett.

Dearborn Chemical Co., Chicago; No-Ox-Id rust preventives; sealing compound for wood water tanks; aluminum protective coating; pipe coating; wrappers for protection of underground pipe—J. A. Crenner, C. I. Loudonback, A. C. Moeller and C. C. Rausch.

Detroit Graphite Co., Detroit, Mich.; L. F. Flanagan.

Paul Dickinson, Inc., Chicago; roof ventilators; smoke jackets; stove jacks; roof drains; exhaust heads—A. J. Filkins, E. M. Filkins and William Harrison.

Duff-Norton Manufacturing Co., Pittsburgh, Pa.; bridge jacks—C. N. Thulin and E. E. Thulin.

Electric Tamper & Equipment Co., Ludington, Mich.; electric power units; concrete vibrators; electric tampers—Stanley Benson, H. W. Cutshall and Raymond Johnson.

Fairmont Railway Motors, Inc., Fairmont, Minn.; literature on motor cars—C. P. Benning, Kenneth Cavins and W. H. Ripken.

Fulton Asphalt Co., Chicago; compressed asphalt blocks—I. McDonald and J. C. Schmidt, Jr. Ingersoll-Rand Co., New York; literature on compressors; pneumatic tools; jack-hammers; rock drills, hoists; sump pumps; pumps—K. I. Thompson.

Insulite Co., Minneapolis, Minn.; building insulation; cold storage insulation; combination insulation and building sheathing; insulating plaster base lath; roof insulation; tile and plank; and hard board products—K. T. Batchelder.

Johns-Manville Sales Corp., New York; samples of Transite pipe; corrugated Transite roofing and siding; asbestos roofing and siding shingles; Transite conduit; asphalt tile flooring; asphalt shingles; built-up roofing; prepared roofing; pipe insulation; asbestos wainscoting and wall board; mechanical packing; asphalt plank—P. R. Austin, T. O'Leary, Jr., H. R. Poulson, W. W. Prosser, F. C. Vandervort and L. T. Youhn.

Lehon Co., Chicago; asphalt shingles; asbestos shingles; prepared and built-up roofing; aluminum paint; waterproofing materials—John Eipper, Tom Lehon, T. L. Kennedy, E. A. Leonard, R. J. Mulrone, John W. Shoop and Harry Wolfe.

Mall Tool Co., Chicago; gas-driven and electric-driven machines for vibrating concrete and surfacing concrete, with attachments for grinding, pumping water, drilling, boring, driving lag screws, wire scratch brushing and sanding—Robert Burgwald, A. W. Mall, F. A. McGonigle, M. Rehnquist and James Stewart.

Massey Concrete Products Corp., Chicago; literature on concrete pipe; concrete cribbing and crossing slabs—Ross Clarke, David A. Hultgren and W. L. McDaniel.

Master Builders Co., Cleveland, Ohio; samples of floor wearing surfaces; rust joint iron; non-shrink aggregate for concrete bonds; reground portland cement paint for concrete surfaces; liquid quick-setting compound; puzzolanic water-reducing agent for mass concrete—William Hinds, Donald Lee and B. R. Wood.

Modern Building Material Co., Chicago; E. A. Batchelder and K. T. Batchelder.

National Lead Co., New York; red lead; white lead; expansion bolts; linseed oil—T. Ancliffe, J. O. W. Belt, W. S. Carlisle, O. Meyer and Hugh M. Millen.

Oxweld Railroad Service Co., Chicago; soldering and brazing outfit; complete welding and cutting outfit—Lem Adams, Duncan Arnold, F. Finstwalt, C. J. Gavin, E. B. Hall, Jr., S. B. Hopkins, G. B. Moynahan and D. H. Pittman.

Patterson-Sargent Co., Chicago; bridge paints; and literature on bridge paints—Geo. W. Anderson, Ben Bowman and W. H. McBride.

Pocket List of Railroad Officials, New York; copies of Pocket List—B. J. Wilson.

Railway Engineering and Maintenance, Chicago; copies of publication—G. E. Boyd, L. R. Gurley, S. W. Hickey, N. D. Howard, E. T. Howson, J. G. Little, H. E. McCandless, H. H. Melville, H. A. Morrison, R. E. Thayer and J. S. Vreeland.

Ruberoid Co., Chicago; Geo. R. McVay.

T. W. Snow Construction Co., Chicago; Barton S. Snow and T. S. Daniels.

Timber Engineering Co., Washington, D. C.; timber connectors; full-sized timber-connector joints; and literature on connectors and timber design—L. P. Keith.

U. S. Wind Engine & Pump Co., Batavia, Ill.; pump jacks; float valves—J. P. Prindle and C. E. Ward.

## N. & W.'s Better Service Conference

(Continued from page 675)

in traffic due to Europe's troubles not divert attention from the basic difficulties of the railroads. Said their report: "We should not, however, allow the present unnatural and temporary rise in business, because of international emergency, to divert our minds from the serious economic condition of the railroads and the need for continuing to carry on the campaign for a square deal in transportation. The unfairness and discrimination against the railroads in the transportation field will continue to exist and deprive our railroads of their share of the business and their rightful place unless and until the situation is corrected by legislation and establishment of a proper national transportation policy." To this end they argued that employees work through Better Service meetings, civic organization and contacts with legislators to advance the ideal of fair regulation in transport. Along this line they

pointed to the literature made available through regional committeemen to all employees as a means of getting the facts and acquainting employees with the problems of their employer.

The committee on better service activities stressed solidarity among the N. & W. "family" and the usefulness of local clubs. It was their opinion that the regional committees have reached a stage of development where "they should be of considerable value if properly utilized in the necessary contacts with public officials, observing unfavorable trends in civic affairs, securing maximum attendance of both employees and the public at local Better Service meetings."

During the two-day conference the delegates heard talks by R. H. Smith, N. & W. vice-president and general manager; J. J. Pelley, president, A. A. R., Merle Thorpe, editor, "Nation's Business," Joseph Marshall, special representative, Freight Claim division, A. A. R., F. M. Rivinus, N. & W. general counsel, and George Dungleinson, Jr., N. & W., vice-president.

## Equipment and Supplies

### New Haven's Repair Program to Cost \$2,000,000

The New York, New Haven & Hartford now has over 1,200 men reconditioning its rolling stock at its Readville, Mass., shops under a \$2,000,000 program in anticipation of possible increases in passenger and freight traffic. In the locomotive shops 665 men are at work and by the end of this year the New Haven expects to have over 270 locomotives, from the smallest to the largest, in shape for service at a cost of about \$1,500,000. The first of these entered the locomotive shops early last December. In addition, over 250 cars for use in passenger service are being rebuilt including 102 passenger coaches, 100 baggage cars, 25 streamlined coaches, 13 mail cars, 8 combination mail-baggage cars and 9 diners. Many of these already are back in service. The freight car shops recently completed repairs on 207 box cars, and are overhauling 100 low-side coal cars and 33 flat cars for work service.

### FREIGHT CARS

THE UNITED STATES NAVY DEPARTMENT, BUREAU OF SUPPLIES AND ACCOUNTS, has ordered 17 flat cars from the Haffner-Thrall Car Company.

THE MAINE CENTRAL has ordered 10 steel covered hopper cars of 70 tons' capacity from the American Car & Foundry Co.

THE UNITED STATES WAR DEPARTMENT, Chief of Engineers, Washington, D. C., opened bids on October 10 for 125 tank cars. The only bidder was the American Car & Foundry Company and it is expected the contract will be awarded to this company shortly. Inquiry for this equip-

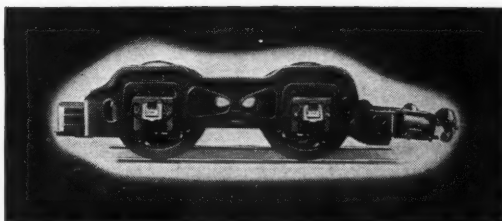
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# FREIGHT CAN'T WAIT



The increases in traffic will soon put a severe strain on the railroads. This continued deluge of freight will shortly be more than the present equipment is capable of handling. » » » The problem of moving today's and tomorrow's tonnage must be met, and increased capacity is the answer. By supplementing your present power with Locomotive Boosters\*, you can haul more tonnage faster and cheaper. » » » Prepare now. Increase the hauling capacity of your existing equipment the economical, Booster way!



\*Trademark Registered United States Patent Office



**FRANKLIN RAILWAY SUPPLY COMPANY, INC.**

**NEW YORK  
CHICAGO  
MONTREAL**

October 28, 1939

ment was reported in the *Railway Age* of October 7, page 540.

THE INLAND STEEL COMPANY has ordered 50 mill-type gondola cars of 70 tons' capacity from the General American Transportation Corporation.

THE ST. LOUIS SOUTHWESTERN has been authorized by the federal district court to spend \$501,658 for the construction of new coal cars, automobile cars and cabooses.

THE BALTIMORE & OHIO has ordered 500 gondola cars of 70 tons' capacity from the American Car & Foundry Co., and 1,000 hopper cars of 50 tons' capacity from the Bethlehem Steel Company. Inquiry for this equipment was reported in the *Railway Age* of September 23, page 437.

THE NORTHERN PACIFIC has ordered 500 steel sheathed box cars of 50 tons' capacity and 150 steel hopper cars of 50 tons' capacity from the American Car & Foundry Co., 150 hopper cars from the General American Transportation Corporation and 500 box cars from the Pullman-Standard Car Manufacturing Co. Inquiry for this equipment was reported in the *Railway Age* of October 21, page 636.

### LOCOMOTIVES

THE CHILEAN STATE RAILWAYS are inquiring for 10 locomotives of the 4-8-2 type and 6 of the 2-8-2 type.

THE FORD MOTOR COMPANY has ordered three Diesel-electric switching and transfer locomotives from the General Electric Company. Each of the locomotives will be equipped with two Type GN, 500-hp. Cooper-Bessemer Corporation Diesel engines.

### IRON AND STEEL

THE CHICAGO, ROCK ISLAND & PACIFIC has ordered 16,000 tons of rails from the Carnegie-Illinois Steel Corporation.

THE ST. LOUIS SOUTHWESTERN has been authorized by the federal district court to spend \$284,170 for new rails.

THE ERIE has ordered 17,425 tons of rails, placing 13,945 tons with the Carnegie-Illinois Steel Corporation, 2,269 with the Bethlehem Steel Company and 1,211 tons with the Inland Steel Company.

THE WABASH has ordered 10,000 tons of 112-lb. rails from the Bethlehem Steel Company, the Inland Steel Company and the Carnegie-Illinois Steel Corporation.

THE MISSOURI PACIFIC has ordered 38,885 tons of rails, including 24,885 tons of 112-lb. and 14,000 tons of 90-lb. sections from the Carnegie-Illinois Steel Corporation, the Tennessee Coal, Iron & Railroad Co., the Bethlehem Steel Company, the Inland Steel Company and the Colorado Fuel & Iron Co. Of the total, 23,995 tons of 112-lb. and 4,970 tons of 90-lb. rails are for use on the Missouri Pacific, 890 tons of 112-lb. for use on the Missouri Pacific in Nebraska, 3,000 tons of 90-lb. rail for use on the St. Louis, Brownsville & Mexico, and 3,000 tons of 90-lb. rail for use on the International Great Northern.

## Supply Trade

Col. Warren R. Roberts, chairman of the board of the **Roberts and Schaefer Company**, Chicago, has retired after 35



Col. Warren R. Roberts

years' service with the company. He was born in Sadorus, Champaign County, Ill., on October 20, 1863, and graduated from the University of Illinois in 1888. He engaged in general engineering practice for three years after graduation, and served as engineer of bridges for the city of Chicago for one year. From 1894 to 1903, he engaged in general engineering and contracting, and in 1904 became president of the Roberts and Schaefer Company, which position he held until 1926 when he was made chairman of the board. He held this position until his retirement, excepting in 1937 and 1938 when he again acted as president.

### OBITUARY

**John M. Borrowdale** of Midgley & Borrowdale, Chicago, died in that city on October 20, at the age of 70 years.

**H. H. Chambers**, western sales manager of the Caterpillar Tractor Company, Peoria, Ill., died at Peralta Hospital, Oakland, Cal., on October 21, after a lingering illness, at the age of 47 years.

**E. Worth Kolb**, manager of commercial inspection and tests for the General Railway Signal Company, with headquarters at Rochester, N. Y., died in that city on October 18, after a brief illness. He was born in Oxford, Ind., on February 21, 1871, and was graduated from Purdue University in 1895. Upon graduation he became a deputy county surveyor for Benton County, Ind., and later engaged in electrical engineering work in Oxford. He entered railway service with the Union Pacific in 1902 as signal maintainer and resigned from this road as signal supervisor in 1908 to become assistant signal engineer of the Chicago, Rock Island & Pacific. In the following year, he was appointed signal engineer of the Buffalo, Rochester & Pittsburgh (now part of the Baltimore & Ohio), which position he held until 1927, when he became manager

of commercial inspection and tests for the General Railway Signal Company.

**William Kemp Vanderpoel**, vice-president of the Okonite Company and of the Okonite-Callender Cable Company, died at his home in South Orange, N. J., on October 21, after a short illness in his 59th year. Mr. Vanderpoel who was an international authority on transmission and power distribution problems had served for a time as assistant purchasing agent of the Florida East Coast Railway. In 1907, Mr. Vanderpoel joined the Public Service Corporation of New Jersey as division superintendent. He was later advanced to general superintendent of the company's entire electric distribution system. In 1926 he became associated with the Okonite Company, when he was elected vice-president and executive engineer. He took a prominent part as a committee worker and as an officer of a number of electrical societies and had served as manager of the American Institute of Electrical Engineers, vice-chairman of the Engineering Section, also on committees of the National Electric Light Association. He had contributed many papers and reports on power systems to the organizations with which he was affiliated and to engineering



William Kemp Vanderpoel

publications. Prior to his connection with the Public Service organization he was engaged in mining in South America. He had also telephone engineering experience in this country and Cuba.

## Construction

**SOUTHERN PACIFIC.**—The Union Paving Company, San Francisco, Cal., with a bid of \$1,138,288, was the low bidder on the contract for the substructure of the Pit River bridge on the relocation of the Southern Pacific and U. S. Highway No. 99, in connection with the 30-mile relocation of this road north of Redding, Cal. The principal items in connection with this work consists of 24 acres of clearing right-of-way; 276,000 cu. yd. of excavation for the abutments and piers; 94,630 cu. yd. of concrete and the placing 5,465 tons of reinforcement bars.



## Financial

**BALTIMORE & OHIO.—Earnings Cover Interest Under Plan.**—The board of directors of this road were advised at a meeting in New York October 18 that September earnings were sufficient to cover both fixed and contingent interest provided in the plan for modification of interest charges and maturities recently approved by a federal court at Baltimore, Md. Income available for interest on funded debt in that month was \$4,043,379, which, after deduction of \$1,581,663 for fixed interest under the plan, leaves available income of \$2,461,716, or sufficient to cover the contingent interest of \$948,036, with a net income of \$1,513,680.

**CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—Abandonment by the Chicago, Terre Haute & Southeastern.**—The Chicago, Terre Haute & Southeastern and the Chicago, Milwaukee, St. Paul & Pacific, respectively, have asked the Interstate Commerce Commission for authority to abandon the line and the operation of the line extending 5.2 miles southeasterly from Windso Junction, Ind.

**COLLINS & GLENNVILLE.—Dismissal of Abandonment Application.**—Division 4 of the Interstate Commerce Commission has dismissed, at this company's request, its application for authority to abandon a line extending from Reidsville, Ga., to Glennville.

**DENVER & RIO GRANDE WESTERN.—R. F. C. Loan Order Modified.**—Division 4 of the Interstate Commerce Commission has modified its order of March 10, 1938, so as to permit this company to use the unexpended proceeds, \$74,266 of a Reconstruction Finance Corporation loan of \$1,800,000 approved, to reimburse its general fund in part for expenditures heretofore made by it in the amount of \$89,133, for replacing rail between Sagers, Utah, and Thompson.

**ERIE.—Ratification of Appointment of Co-Trustee.**—Robert E. Woodruff has asked the Interstate Commerce Commission to ratify his appointment as co-trustee of this company, succeeding C. E. Denney, who has resigned to become president of the Northern Pacific.

**Abandonment by the Avon, Geneseo & Mount Morris.**—The Avon, Geneseo & Mount Morris would be permitted to abandon its entire line and the Erie would be authorized to abandon the operation of the line extending from Avon, N. Y., to Sonyea, 17.7 miles, if the Interstate Commerce Commission adopts a proposed report of its Examiner J. S. Prichard.

**ILLINOIS CENTRAL—CHICAGO, BURLINGTON & QUINCY.—Operation by the Paducah & Illinois.**—The Paducah & Illinois has asked the Interstate Commerce Commission for authority to operate under a contract for joint use over 0.86 mile of line of the Nashville, Chattanooga & St. Louis in Paducah, Ky.

**ILLINOIS CENTRAL.—Abandonment by the**

**Meridian, Brookhaven & Natchez.**—The Meridian, Brookhaven & Natchez and the Illinois Central, respectively, have asked the Interstate Commerce Commission for authority to abandon the line and the operation of the line extending from Brookhaven, Miss., to the Brookhaven Gravel Pit, 4.7 miles.

**KANSAS CITY SOUTHERN.—Serial Note Issue.**—This road has called a special stockholders' meeting for December 21 in Kansas City, Mo., for the approval and ratification of an issue of \$2,558,000 principal amount of 3 per cent serial secured notes of the company, dated October 1, 1939, and maturing in quarterly installments beginning January 1 and ending October 1, 1949. The notes were issued to provide funds for the purchase of prior preferred 6 per cent cumulative stock of the Louisiana & Arkansas by the Kansas City Southern. All of the prior preferred and preferred L. & A. stock required by the K. C. S. is pledged under the indenture covering issuance. Dividends on the stock, if paid in full, will amount to \$299,520 per annum, or slightly in excess of the maximum annual principal and interest requirements of the notes.

**LOUISVILLE & NASHVILLE.—Equipment Trust Certificates.**—This company has asked the Interstate Commerce Commission for authority to assume liability for \$2,025,000 of 2¾ per cent equipment trust certificates, maturing in 15 equal annual installments of \$135,000 on December 1, in each of the years from 1940 to 1954 inclusive. The proceeds will be used to finance in part the purchase of 1,200 new coal cars at an estimated cost of \$2,717,694.

**MINNESOTA, DAKOTA & WESTERN.—Abandonment.**—This company has asked the Interstate Commerce Commission for authority to abandon its so-called Loman line, extending from Nakoda Junction, Minn., on the Big Fork & International, to Loman, 18 miles.

**MISSOURI SOUTHERN.—Abandonment.**—This company has asked the Interstate Commerce Commission for authority to abandon a line extending from Hobart, Mo., to Himont, 10.4 miles.

**SOUTHERN NEW JERSEY.—Abandonment.**—This company has asked the Interstate Commerce Commission for authority to abandon its entire line extending from Tuckerton, N. J., to Barnegat, 12 miles, together with a branch line extending from Manahawkin, N. J., to Hilliard, three miles.

**VENTURA COUNTY.—Abandonment.**—This company has applied to the Interstate Commerce Commission for authority to abandon its Petit branch spur track extending from De Bo Junction, Calif., to Petit on the Round Mountain branch of this company, 1½ miles.

### Average Prices of Stocks and Bonds

	Oct. 24	Last week	Last year
Average price of 20 representative railway stocks..	35.01	35.46	32.43
Average price of 20 representative railway bonds..	60.19	60.51	61.59

## Railway Officers

### EXECUTIVE

**Chester G. Hayes**, whose election as vice-president-traffic of the Texas & Pacific, with headquarters at Dallas, Tex., was announced in the *Railway Age* of October 21, entered railroad service in 1912



Chester G. Hayes

as a clerk in the operating department of the Alton at Bloomington, Ill., and two years later he went with the Pennsylvania as a stenographer at Chicago. In 1917, he went with the Texas & Pacific in the Chicago commercial office, and subsequently advanced to the position of secretary, traveling freight agent and chief clerk. Mr. Hayes was promoted to general agent, with headquarters at Detroit, Mich., in February, 1924, and four years later he was advanced to assistant general freight agent, with headquarters at Dallas. In November, 1938, he was promoted to traffic manager, with headquarters at Dallas, the position he held until his recent promotion.

### FINANCIAL, LEGAL AND ACCOUNTING

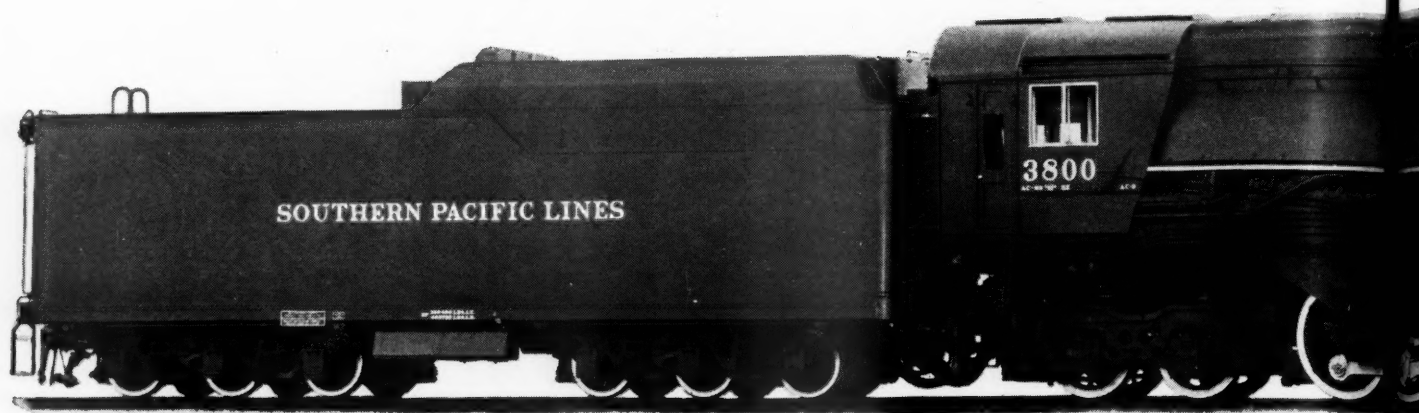
**Kenneth O. Mott-Smith and C. Austin White**, assistants to general attorney, New York Central, have been appointed assistant general attorneys, with headquarters at New York.

**L. P. O'Connor**, assistant auditor of passenger receipts of the Missouri Pacific, has been promoted to auditor of passenger receipts, with headquarters as before at St. Louis, Mo., succeeding **H. H. McIntyre**, who retired on October 1.

**John H. Hande**, accounting engineer of the Baltimore & Ohio, has been appointed auditor capital expenditures, with headquarters at Baltimore, Md. **W. L. McGuigan**, special accountant, has been appointed tax accountant, with headquarters at Baltimore. Mr. Hande was born at Park Ridge, Ill., on May 21, 1885, and studied engineering at the University of Wisconsin. From 1905 to 1911 he was as-

Continued on second left-hand page

# HIGH-SPEED MALLET'S FOR



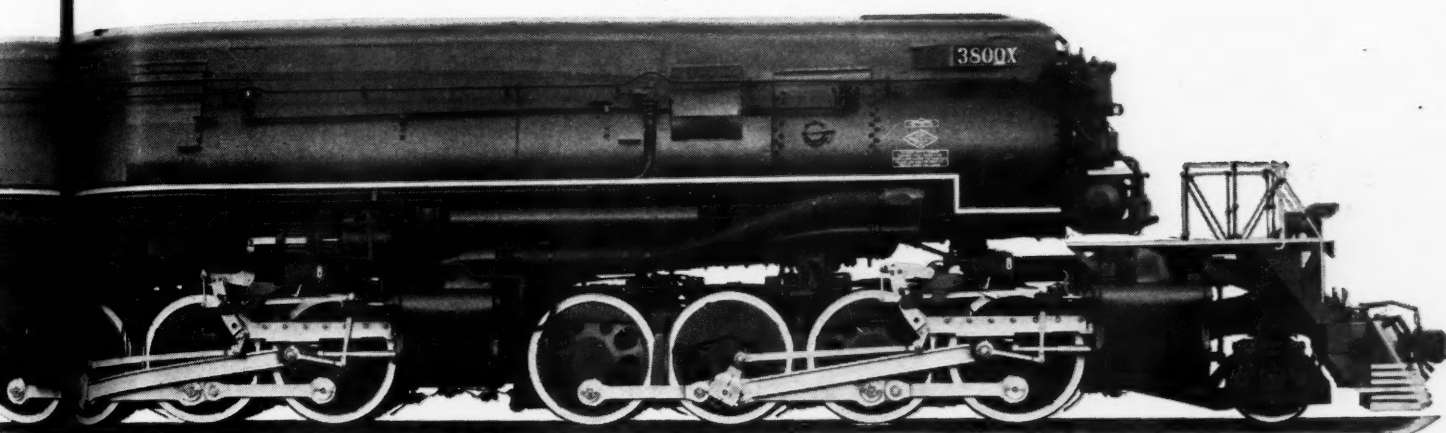
WEIGHTS IN WORKING ORDER, POUNDS				
On Drivers	Eng. Truck	Trailer Truck	Total Engine	Tender Loaded
Front Unit 265,500 Rear Unit 265,700	48,300	Front 48,900 Rear 61,500	689,900	400,700
WHEEL BASE			TRACTION EFFORT	
Driving	Engine	Eng. & Tender	Main Cylinders 124,300	
44'-7"	66'-3"	112'-11 $\frac{1}{8}$ "		
BOILER		CYLINDERS 4		DRIVING WHEEL
Diameter	Pressure	Diameter	Stroke	Diameter
97 $\frac{1}{4}$ " Front 109 $\frac{1}{8}$ " Back	250 lbs.	24"	32"	63 $\frac{1}{2}$ "



**LIMA**



# R THE SOUTHERN PACIFIC



The first of twelve high-speed 2-8-8-4 type locomotives now being delivered by Lima to the Southern Pacific Company.

These locomotives will be used by the Southern Pacific Company to meet their requirements of high-capacity, high-speed freight and passenger service.

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**LOCOMOTIVE WORKS, INCORPORATED**  
**LIMA** **OHIO**

sistant engineer on the Chicago & North-western and inspector in the rehabilitation of the Chicago street railways. From No-



**John H. Hande**

vember, 1911, to July, 1914, he served as division engineer with the Duluth, Winnipeg & Pacific on construction from the Iron Range into Duluth, Minn., and in the valuation of this railroad's properties for the State Railroad and Warehouse Commission. Two years prior to his going with the Baltimore & Ohio he was sales engineer in Duluth and Chicago. Mr. Hande entered the service of the Baltimore & Ohio in January, 1917, as assistant engineer on federal valuation of the road's Chicago Terminal properties. In August of the following year, he became special engineer on the staff of the chief engineer, Western lines, at Cincinnati, Ohio, being transferred to Baltimore in June, 1920 as improvement engineer. Mr. Hande became accounting engineer in July, 1922, in which position he has since remained.

Mr. McGuigan was born on August 12, 1884, at Preston, Ont., Canada, and after graduating from St. Joseph's Collegiate Institute, Buffalo, N. Y., he became identified with the Buffalo & Susquehanna at Buffalo on September 13, 1904. Mr. McGuigan was appointed federal auditor with the U. S. Railroad Administration in August, 1916, and was appointed auditor of



**W. L. McGuigan**

the Buffalo & Susquehanna on March 1, 1920. Following the acquisition of this line by the Baltimore & Ohio, Mr. Mc-

Guigan became special accountant under the assistant comptroller at Baltimore on January 1, 1932.

## OPERATING

**Leon B. Kendall**, superintendent of telegraph of the Chicago & North Western, with headquarters at Chicago, has been appointed division superintendent, with headquarters at Sioux City, Iowa, succeeding **C. R. Hunter**, whose death on October 4, is announced elsewhere in these columns.

Mr. Kendall was born at Pompanoosuc, Vt., on November 26, 1888, and graduated from Dartmouth College in 1910. He entered railway service on August 17, 1910, as a telegrapher on the Dakota division of the North Western and was promoted to train dispatcher in 1911. He was advanced to chief train dispatcher at Huron, S. D., in 1918, and on September 5, 1925, he was appointed trainmaster at Boone, Iowa, later serving in that capacity at West Chicago, Sterling, Ill., and Madison, Wis. Mr. Kendall was promoted to assistant superintendent of the Madison division, with headquarters at Winona,



**Leon B. Kendall**

Minn., on August 6, 1936, and on January 20, 1937, he was appointed superintendent of telegraph, with headquarters at Chicago, holding that position until his recent promotion, which was effective October 12.

**Lloyd F. Donald**, superintendent on the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at LaCrosse, Wis., has been promoted to general superintendent, with headquarters at Milwaukee, Wis., succeeding **A. J. Elder**, whose promotion to assistant general manager, with headquarters at Chicago, was announced in the *Railway Age* of September 30, and **W. C. Givens**, superintendent, with headquarters at Savanna, Ill., has been transferred to LaCrosse, replacing Mr. Donald. **H. B. Munson**, superintendent at Austin, Minn., has been transferred to Savanna, and **W. J. Hotchkiss**, assistant superintendent at Perry, Iowa, has been promoted to superintendent at Austin. **L. W. Palmquist**, trainmaster at Aberdeen, S. D., has been promoted to assistant superintendent at Perry, and **J. B. Shea**, trainmaster at Madison, Wis., has been transferred to

Aberdeen, S. D. **M. T. Ayars**, trainmaster at Austin, has been transferred to Madison, succeeding Mr. Shea, and **P. J.**



**Lloyd F. Donald**

**Weiland**, has been appointed trainmaster at Austin, relieving Mr. Ayars.

Mr. Donald was born at Savanna, Ill., on April 4, 1894, and entered railway service in June, 1912, as a roundhouse clerk on the Milwaukee at Savanna. During the next few years he served as a roadmaster's clerk at Elgin, Ill., as trainmaster's timekeeper at Savanna, and as a clerk in the office of the superintendent at Milwaukee, Wis. In 1917, he was advanced to chief clerk to the superintendent at Milwaukee, and he was later transferred to Green Bay, Wis., and Sioux City, Iowa. In 1921, he was appointed chief clerk to the assistant general manager in Chicago, and in 1922, he was promoted to trainmaster at Chicago, later being transferred successively to Sioux City, Iowa, St. Paul, Minn., and Montevideo, Minn. Mr. Donald was promoted to assistant superintendent at Terre Haute, Ind., on November 1, 1926, and in 1928 he was transferred to Chicago. On January 1, 1929, he was promoted to superintendent at Terre Haute, and on November 1, 1930, he was transferred to the Dubuque and Illinois division, with headquarters at Savanna. Mr. Donald was



**Walter J. Hotchkiss**

transferred to the LaCrosse and River division, with headquarters at LaCrosse, on July 14, 1935, where he remained until





**... a shortened  
arch falls short  
of full economy**

**S**CRUTINIZE every dollar of expenditure today. But do it thoroughly, considering the inter-relating effect on other items, to determine the net economy.

Paring down on Arch Brick only means buying more fuel. Here is one false economy that means a net loss to the railroad.

Now, when economy is needed so sorely, don't handicap the effectiveness of the Arch by skimping on Arch Brick.

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*Refractory Specialists***



**AMERICAN ARCH CO.  
INCORPORATED  
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*Locomotive Combustion  
Specialists***

his recent promotion, which was effective October 1.

Mr. Hotchkiss was born at Waterville, Kan., on April 18, 1894, and entered railway service in August, 1911, as a telegraph operator and agent on the La Crosse division of the Chicago, Burlington & Quincy. In October, 1916, he went with the Milwaukee as an agent and operator and in September, 1918, he was promoted to train dispatcher on the Illinois division. Mr. Hotchkiss was advanced to chief dispatcher in February, 1925, and in July, 1927, he was promoted to trainmaster on the Dubuque division, later serving in that capacity on the Superior and Illinois divisions, at the Twin City Terminals and on the Iowa division. In February, 1937, he was promoted to assistant superintendent, with headquarters at Perry, Iowa, the position he held until his recent promotion.

### TRAFFIC

**W. C. Mittelberg**, secretary to the trustee and chairman of the executive committee of the Western Pacific, with headquarters at New York, has been appointed,



Blank & Stoller

Walter C. Mittelberg

effective November 1, general freight agent, with headquarters at San Francisco, Cal., a newly created position.

Mr. Mittelberg was born in New York on January 23, 1904, and entered railway service on November 11, 1920, as a clerk in the traffic department of the Southern Pacific at New York. On June 1, 1925, he was appointed secretary to the assistant to the vice-president in charge of traffic at Chicago, and on January 1, 1926, he became secretary to the vice-president in charge of traffic at Chicago. Mr. Mittelberg went with the Western Pacific on July 1, 1926, as secretary to the chairman of the executive committee, which position he has held to date.

### ENGINEERING AND SIGNALING

**F. P. Funda**, division engineer on the Chicago, Rock Island & Pacific, with headquarters at Kansas City, Mo., has been transferred to Rock Island, Ill., succeeding **Frank W. Thompson**, whose promotion to engineer officer, with headquarters at Chicago, was announced in the *Railway*

*Age* of October 7. **J. T. Fitzgerald**, roadmaster at Topeka, Kan., has been promoted to division engineer, with headquarters at Kansas City, Mo., succeeding Mr. Funda.

**C. I. Van Arsdalen**, track supervisor on the Illinois Central at Champaign, Ill., has been promoted to division engineer of the St. Louis division, with headquarters at Carbondale, Ill., succeeding **W. R. Gilliam**, who has been transferred to the Illinois division, with headquarters at Champaign. Mr. Gilliam replaces **C. J. Harrington**, whose death on September 29 was announced in the *Railway Age* of October 7.

**H. L. Barr**, assistant engineer on the Chicago & North Western at Huron, S. D., has been promoted to division engineer, with headquarters at Chadron, Neb., succeeding **D. C. Barrett**, who has been transferred to Norfolk, Neb. Mr. Barrett relieves **C. F. Womeldorf**, who will retire on November 1.

### MECHANICAL

**James P. Galvin**, traveling electrician for the Chicago, Burlington & Quincy, has been promoted to chief electrician, system, with headquarters at Chicago, succeeding **R. E. Taylor**, who retired on October 16.

**C. O. Shull**, master mechanic on the Pennsylvania at Wilmington, Del., has been transferred in the same capacity to the Juniata shop. **A. W. Byron**, master mechanic at West Philadelphia, Pa., has been transferred to Wilmington. **C. T. Hunt**, assistant master mechanic at Mingo Junction, has been appointed master mechanic at West Philadelphia.

### OBITUARY

**Herbert A. Rowe**, manager of the claims department of the Delaware, Lackawanna & Western, with headquarters at New York, died on October 19 at his home in Summit, N. J.

**Charles H. Weber**, assistant division superintendent of the New York Central, lines Buffalo and East, with headquarters at Buffalo, N. Y., died on October 18, after several weeks' illness, at the age of 60.

**William Hodson**, who retired as assistant treasurer of the Chicago, Rock Island & Pacific, with headquarters at Chicago, on December 31, 1928, died on October 19, at his home in LaGrange, Ill. Mr. Hodson, who was 81 years old, had been ill for more than a year.

**John M. Dewberry**, general coal and coke agent of the Louisville & Nashville, with headquarters at Louisville, Ky., died on October 19 at St. Joseph's Infirmary in that city after a protracted illness. Mr. Dewberry was born on July 18, 1873, and entered railway service in 1887 as a clerk in the office of the local freight agent of the East Tennessee, Virginia & Georgia (now part of the Southern) at Macon, Ga., later being transferred to Atlanta, Ga., and to the traffic manager's office at Knox-

ville, Tenn. On September 18, 1893, he went with the L. & N. in the president's office at Louisville and from July, 1897 to December, 1897, he served with the Southwestern Freight Bureau at St. Louis, Mo. From December, 1897 to February, 1912, Mr. Dewberry served the L. & N. at Louisville successively as a clerk in the accounting, operating and law departments, secretary to the traffic manager, secretary to the first vice-president, secretary to the third vice-president and assistant chief clerk to the traffic manager and third vice-president. On the latter date he was advanced to assistant to the third vice-president and in December, 1921, he was promoted to general coal and coke agent, with headquarters as before at Louisville, which position he held until his death.

**Albert E. Warren**, vice-president of the Canadian National, with headquarters at Winnipeg, Man., whose death on October 16 was announced in the *Railway Age* of October 21, was born at Taunton, England, on June 9, 1874, and entered railway service in 1889 as a clerk in the car service department of the Canadian



Albert E. Warren

Pacific. For the following 22 years, Mr. Warren served that road in various capacities in the car service department, in the offices of the superintendent, general superintendent, and general manager and in station and yard service. He left railway work in July, 1901, to return in August, 1902, as a station agent on the Canadian Northern (now part of the Canadian National). He was then advanced successively to the positions of chief clerk to the general manager, superintendent, general superintendent and assistant to the general manager of the Western lines. On August 1, 1918, Mr. Warren was appointed chief operating officer of the Department of Railways and Canals at Ottawa, Ont., and in the same year he became general manager of the Western lines of the Canadian National, with headquarters at Winnipeg. In July, 1925, he was transferred to the Central region, with headquarters at Toronto, Ont., and in August, 1929, he was elected vice-president in charge of the Western region of the Canadian National, with headquarters at Winnipeg, the position he held until his death.



# EXHAUST STEAM PUT TO USEFUL WORK



Steam exhausted up the locomotive stack contains latent power—power in heat that can be put to useful work. A large part of this latent power can be reclaimed and utilized by the Elesco exhaust steam injector.

Through an Elesco exhaust steam injector the heat and moisture from a substantial part of the waste exhaust steam is transferred back to the boiler, where it is transformed into energy for use at the locomotive cylinders.

An Elesco exhaust steam injector is the logical equipment for this purpose. It is low in initial cost, and maintenance cost is negligible as there are no moving parts.

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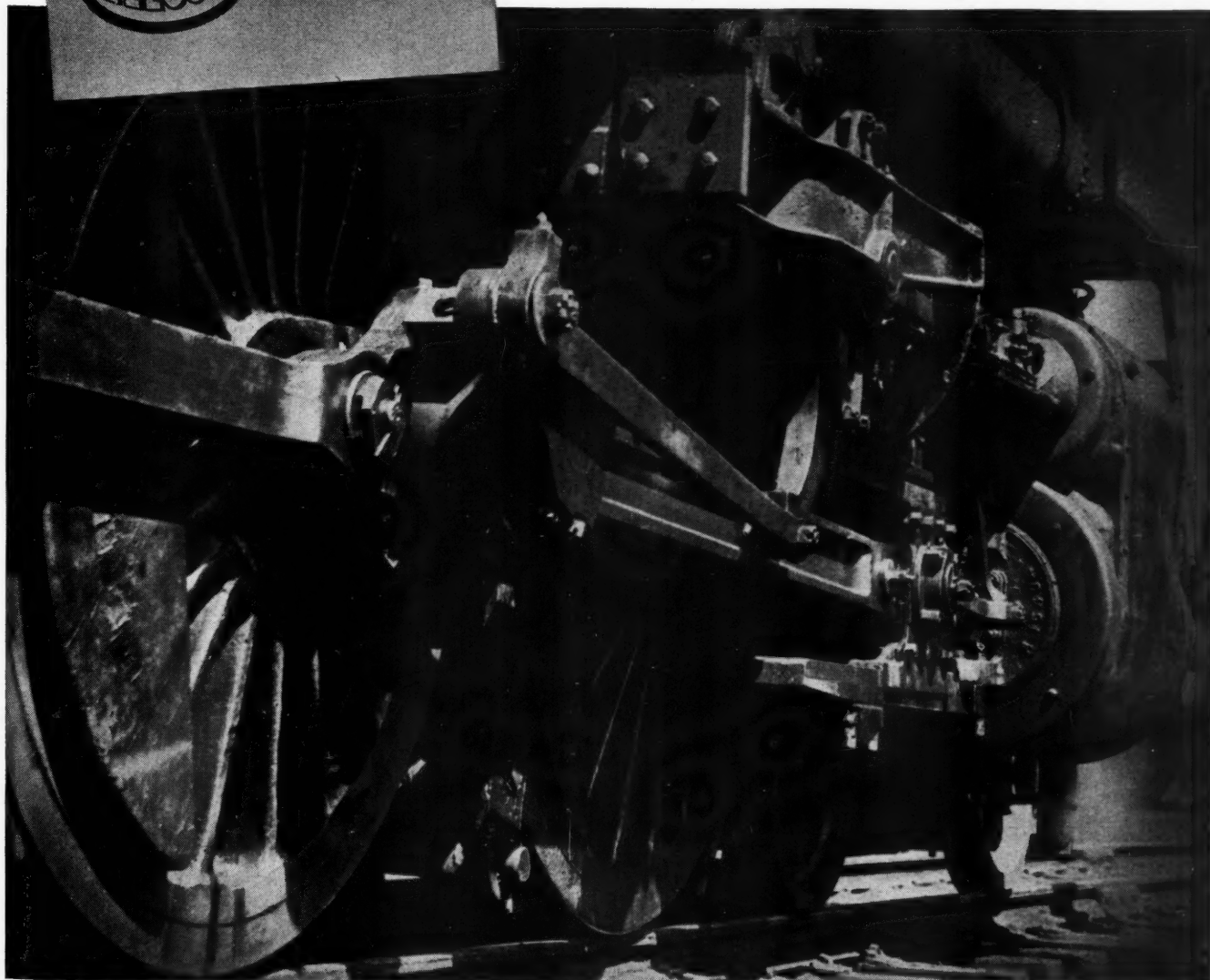
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Superheaters—Superheated Steam Pyrometers—Exhaust Steam Injectors—Feedwater Heaters—American Throttles—Steam Dryers



## Freight Operating Statistics of Large Steam Railways—Selected Items for the Month of August,

Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles		Car-miles		Ton-miles (thousands)		Number of road locomotives on line					
			Principal and helper	Light	Loaded (thousands)	Per cent loaded	Gross, excluding locomotives and tenders	Net, revenue and non-revenue	Serviceable			Un-serviceable	Per cent un-serviceable	
									Not stored	Stored				
New England Region:														
Boston & Albany .....	1939	362	117,347	120,512	8,084	2,672	66.7	149,217	52,221	50	13	25	28.4	
1938	374	109,396	113,942	7,826	2,490	66.3	137,362	45,802	51	6	33	36.7		
Boston & Maine .....	1939	1,915	262,956	287,764	21,095	8,692	68.9	483,891	180,399	123	2	50	28.6	
1938	1,937	233,022	254,760	19,517	7,764	71.0	416,051	152,493	117	2	116	49.4		
N. Y., New Hav. & Hartf. ....	1939	1,845	323,606	403,824	24,808	11,241	66.1	613,042	227,438	180	6	75	29.4	
1938	1,868	291,375	364,250	17,046	9,670	65.5	521,939	189,152	158	21	96	35.2		
Great Lakes Region:														
Delaware & Hudson .....	1939	847	221,111	287,147	29,678	7,300	64.9	450,860	210,163	137	41	65	26.7	
1938	830	180,349	233,897	23,215	5,817	64.5	351,157	159,294	93	121	46	17.7		
Del., Lack. & Western .....	1939	983	328,717	365,789	49,159	11,368	69.1	644,558	249,671	113	15	82	39.0	
1938	983	292,288	324,946	41,176	9,909	68.7	564,030	212,598	115	19	85	38.8		
Erie (incl. Chi. & Erie) .....	1939	2,290	649,338	689,065	36,101	28,134	65.5	1,731,690	637,679	217	29	224	47.7	
1938	2,275	596,694	629,586	30,978	25,705	64.5	1,579,420	556,946	206	41	223	47.4		
Grand Trunk Western .....	1939	1,023	211,147	211,795	1,292	5,675	63.4	344,239	122,424	64	7	29	29.0	
1938	1,027	207,464	208,103	1,318	4,984	62.1	305,294	104,789	62	1	47	42.7		
Lehigh Valley .....	1939	1,265	284,797	312,892	46,203	11,380	66.5	702,414	293,462	116	..	109	48.4	
1938	1,288	257,395	279,736	38,777	9,860	64.9	613,371	247,316	108	3	123	52.6		
New York Central .....	1939	10,609	2,404,976	2,545,620	158,714	78,947	60.0	5,412,576	2,295,629	813	160	464	32.3	
1938	10,651	2,213,022	2,318,388	134,876	71,399	60.4	4,739,738	1,934,849	710	245	522	35.3		
N. Y., Chicago & St. Louis .....	1939	1,672	471,153	476,592	5,750	17,234	63.9	1,038,117	379,943	147	11	40	20.2	
1938	1,672	440,949	445,133	5,422	15,379	62.0	937,041	332,507	138	22	38	19.2		
Pere Marquette .....	1939	2,081	321,225	325,605	5,165	8,056	61.7	527,807	209,760	105	9	47	29.2	
1938	2,081	272,180	281,080	5,234	6,993	60.9	458,693	179,649	94	19	51	31.1		
Pittsburgh & Lake Erie .....	1939	233	65,953	67,605	.....	3,082	62.7	267,839	156,504	35	9	31	41.3	
1938	233	56,095	57,458	.....	2,279	59.0	193,518	105,983	29	5	39	53.4		
Wabash .....	1939	2,397	517,890	528,650	10,922	16,031	65.0	951,188	335,226	135	10	125	46.3	
1938	2,421	505,528	516,377	10,939	15,508	64.8	919,345	320,821	127	14	138	49.5		
Central Eastern Region:														
Baltimore & Ohio .....	1939	6,269	1,427,099	1,752,673	189,070	45,898	62.4	3,201,094	1,462,229	629	82	495	41.0	
1938	6,314	1,253,969	1,521,007	155,513	38,657	61.3	2,664,388	1,166,933	543	162	535	43.1		
Central of New Jersey .....	1939	679	150,722	170,075	28,881	4,564	61.3	314,979	147,871	70	5	82	52.2	
1938	679	135,898	155,189	28,461	4,093	59.9	281,556	126,552	73	4	78	50.3		
Chicago & Eastern Illinois .....	1939	927	161,192	161,706	2,944	3,894	67.2	236,664	99,465	52	4	37	39.8	
1938	927	154,578	154,620	2,613	3,580	67.8	213,620	87,422	52	2	53	49.5		
Elgin, Joliet & Eastern .....	1939	390	89,142	90,333	1,598	2,197	60.3	166,685	79,990	53	7	23	27.7	
1938	435	77,280	77,964	725	1,772	59.0	136,303	63,582	45	7	31	37.3		
Long Island .....	1939	375	23,990	25,013	16,001	241	50.3	18,723	7,053	31	6	11	22.9	
1938	390	26,817	27,480	14,879	241	51.0	18,432	6,733	25	11	12	25.0		
Pennsylvania System .....	1939	9,967	2,554,438	3,085,201	356,410	99,643	61.6	6,820,046	3,031,403	1,099	125	1,066	46.6	
1938	10,025	2,258,704	2,732,520	287,771	84,589	61.5	5,695,519	2,471,845	1,054	389	948	39.6		
Reading .....	1939	1,442	383,672	419,217	45,951	10,940	61.5	786,678	378,998	187	11	167	45.8	
1938	1,444	330,684	365,921	41,247	9,381	59.9	680,448	314,444	165	34	150	43.0		
Pocahontas Region:														
Chesapeake & Ohio .....	1939	3,055	886,136	928,606	40,071	41,064	56.0	3,523,740	1,915,376	364	42	118	23.8	
1938	3,050	755,318	788,228	33,612	33,261	55.3	2,836,678	1,540,848	325	64	140	26.5		
Norfolk & Western .....	1939	2,169	670,977	699,334	36,291	29,995	57.7	2,531,975	1,351,997	270	49	44	12.1	
1938	2,178	583,903	602,161	27,584	24,605	58.3	1,977,453	1,026,816	254	77	41	11.0		
Southern Region:														
Atlantic Coast Line .....	1939	5,077	526,729	529,722	8,026	10,880	63.0	630,723	220,526	225	42	107	28.6	
1938	5,079	461,208	463,725	6,740	10,094	62.8	579,419	197,016	223	54	96	25.7		
Central of Georgia .....	1939	1,838	235,170	235,999	3,402	4,897	71.9	268,094	102,666	92	..	28	23.3	
1938	1,886	229,693	231,007	2,811	4,729	69.5	262,418	98,574	96	..	29	23.2		
Illinois Central (incl. Y. & M. V.) .....	1939	6,537	1,169,589	1,181,134	21,118	33,873	61.4	2,193,077	887,977	529	90	230	27.1	
& M. V.) .....	1938	6,540	1,232,901	1,237,877	22,219	32,484	60.5	2,127,289	852,533	605	34	230	26.5	
Louisville & Nashville .....	1939	4,897	1,056,088	1,139,465	29,666	26,543	59.9	1,897,465	910,226	324	15	203	37.5	
1938	4,928	956,068	1,033,330	25,152	22,872	58.5	1,631,573	768,702	306	41	208	37.5		
Seaboard Air Line .....	1939	4,305	455,086	468,785	3,193	11,122	65.0	647,879	250,917	216	31	56	18.5	
1938	4,305	423,473	438,169	3,142	10,572	66.1	609,185	236,759	191	39	74	24.3		
Southern .....	1939	6,491	1,304,030	1,323,269	20,724	30,073	66.5	1,749,356	694,457	480	3	172	26.3	
1938	6,561	1,165,705	1,183,170	17,447	26,704	66.7	1,531,952	597,230	494	6	204	29.0		
Northwestern Region:														
Chicago & North Western .....	1939	8,326	884,999	907,698	18,525	26,258	63.2	1,690,291	643,321	310	69	288	43.2	
1938	8,388	866,643	899,305	20,422	24,792	62.7	1,574,299	557,820	297	160	229	33.4		
Chicago Great Western .....	1939	1,450	250,771	255,244	5,591	7,320	61.2	464,564	165,734	62	4	23	25.8	
1938	1,450	245,796	247,090	7,617	6,866	60.5	437,832	154,177	63	5	26	27.7		
Chi., Milw., St. P. & Pac. ....	1939	10,882	1,289,935	1,336,070	47,312	36,691	60.5	2,423,009	982,191	445	65	156	23.4	
1938	10,943	1,316,755	1,355,290	47,611	34,867	57.9	2,380,519	952,038	462	75	139	20.6		
Chi., St. P., Minneap. & Om. ....	1939	1,619	244,207	254,828	11,303	5,560	66.7	351,122	145,707	113	14	14	9.9	
1938	1,636	234,570	245,811	12,126	5,285	64.9	337,356	142,967	109	21	14	9.7		
Great Northern .....	1939	7,976	952,857	950,224	31,090	33,692	59.2	2,536,832	1,149,341	370	24	154	28.1	
1938	7,976	915,356	910,342	30,578	30,232	57.1	2,273,157	1,000,354	364	29	156	28.4		
Minneap., St. P. & S. St. M. ....	1939	4,265	414,524	423,827	4,325	10,174	60.5	650,465	273,114	119	..	24	16.8	
1938	4,273	403,675	409,763	3,323	9,045	61.3	574,319	239,293	129	..	25	16.2		
Northern Pacific .....	1939	6,423	742,222	787,501	42,814	25,075	64.7	1,621,105	675,937	333	18	88	20.0	
1938	6,423	714,208	754,787	40,118	22,882	61.0	1,507,015	608,350	315	22	107	24.1		
Central Western Region:														
Alton .....	1939	914	223,227	239,153	1,120	4,764	60.8	313,230	114,133	51	13	22	25.6	
1938	912	203,459	217,026	1,146	4,291	59.6	279,366	105,197	60	9	26	27.4		
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.) ..	1939	13,447	1,789,622	1,906,870	81,800	48,787	60.7	3,198,079	1,025,372	586	64	249	27.7	
1938	13,500	1,774,741	1,898,918	83,698										

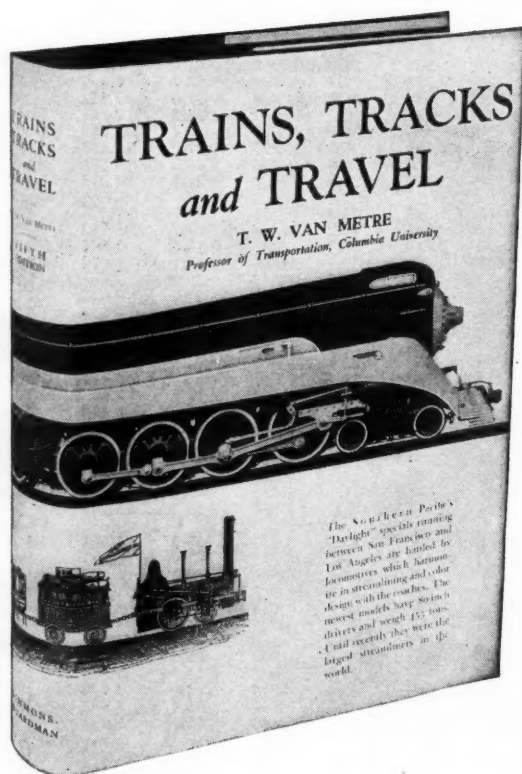


## 1939, Compared with August, 1938, for Roads with Annual Operating Revenues Above \$25,000,000

Region, road, and year	Number of freight cars on line			Per cent un-service-able	Gross ton-miles per train-hour, excluding locomotives and tenders		Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	Locomotive-miles per locomotive-day	
	Home	Foreign	Total		Gross ton-miles per train-hour, excluding locomotives and tenders	Gross ton-miles per train-mile, excluding locomotives and tenders								
New England Region:														
Boston & Albany .....	1939	1,146	3,952	5,098	2.6	20,494	1,282	449	19.5	330	25.3	4,653	142	50.9
	1938	860	3,291	4,151	3.3	20,784	1,261	420	18.4	342	28.1	3,950	157	46.6
Boston & Maine .....	1939	5,896	6,036	11,932	6.1	25,943	1,846	688	20.8	475	33.2	3,039	92	60.2
	1938	8,020	6,697	14,717	13.5	24,658	1,793	657	19.6	324	23.2	2,540	95	40.7
N. Y., New Hav. & Hartf. ....	1939	7,573	10,196	17,769	7.9	27,410	1,925	714	20.2	408	30.5	3,977	95	59.1
	1938	9,616	8,462	18,078	16.9	26,169	1,819	659	19.6	327	25.6	3,266	94	50.4
Great Lakes Region:														
Delaware & Hudson .....	1939	8,404	3,419	11,823	3.9	30,872	2,052	956	28.8	582	31.1	8,004	106	44.3
	1938	9,291	2,433	11,724	5.9	29,305	1,957	888	27.4	429	24.3	6,191	102	33.5
Del., Lack. & Western .....	1939	12,532	5,301	17,833	12.7	35,706	1,986	769	22.0	457	30.1	8,193	117	67.7
	1938	13,611	4,624	18,235	17.7	35,431	1,956	737	21.5	380	25.8	6,977	121	57.0
Erie (incl. Chi. & Erie) .....	1939	16,894	11,921	28,815	6.1	46,138	2,687	989	22.7	722	48.7	8,983	87	54.8
	1938	18,273	12,343	30,616	7.9	45,036	2,666	940	21.7	590	42.2	7,897	86	50.5
Grand Trunk Western .....	1939	4,857	5,549	10,406	11.1	32,648	1,639	583	21.6	390	28.5	3,860	87	75.4
	1938	6,112	4,547	10,659	17.9	30,885	1,476	507	21.0	332	25.4	3,291	94	67.7
Lehigh Valley .....	1939	9,787	6,843	16,630	3.0	46,281	2,495	1,042	25.8	567	33.1	7,483	103	54.6
	1938	11,539	7,520	19,059	10.7	43,625	2,405	970	25.1	412	25.3	6,194	102	46.8
New York Central .....	1939	90,493	62,456	152,949	19.3	38,024	2,273	964	29.1	490	28.1	6,980	92	68.6
	1938	101,918	54,419	156,337	23.9	35,989	2,162	883	27.1	398	24.3	5,860	94	60.4
N. Y., Chicago & St. Louis .....	1939	6,308	7,425	13,733	4.1	41,295	2,207	808	22.0	868	61.6	7,330	80	85.1
	1938	7,628	6,525	14,153	5.7	40,127	2,131	756	21.6	739	55.2	6,415	80	79.6
Pere Marquette .....	1939	9,447	6,058	15,505	3.9	27,912	1,650	656	26.0	434	27.0	3,252	90	74.1
	1938	11,111	4,801	15,912	4.6	27,449	1,686	660	25.7	364	23.3	2,785	83	64.3
Pittsburgh & Lake Erie .....	1939	9,119	8,567	17,686	38.2	54,539	4,062	2,374	50.8	289	9.1	21,667	74	31.2
	1938	9,428	8,131	17,559	37.0	48,079	3,452	1,891	46.5	193	7.0	14,673	77	27.9
Wabash .....	1939	16,253	8,732	24,985	11.9	38,196	1,848	651	20.9	456	33.5	4,511	105	68.4
	1938	16,449	7,539	23,988	9.3	36,993	1,832	639	20.7	431	32.1	4,275	102	64.5
Central Eastern Region:														
Baltimore & Ohio .....	1939	56,878	24,703	81,581	19.6	31,079	2,278	1,041	31.9	571	28.7	7,524	124	55.6
	1938	61,353	20,206	81,559	20.9	29,431	2,154	943	30.2	458	24.7	5,962	126	46.5
Central of New Jersey .....	1939	10,021	10,138	20,159	30.8	27,983	2,223	1,044	32.4	237	12.0	7,025	132	53.5
	1938	10,611	8,942	19,553	34.3	26,289	2,207	992	30.9	206	11.1	6,012	131	50.5
Chicago & Eastern Illinois .....	1939	3,378	2,792	6,170	7.9	26,690	1,473	619	25.5	513	29.9	3,461	114	59.7
	1938	3,426	2,480	5,906	13.4	25,120	1,385	567	24.4	475	28.7	3,042	117	50.0
Elgin, Joliet & Eastern .....	1939	8,165	2,787	10,952	3.2	17,964	1,914	918	36.4	238	10.8	6,616	106	49.4
	1938	8,502	2,288	10,790	8.8	17,078	1,796	838	35.9	189	8.9	4,715	105	42.5
Long Island .....	1939	285	2,887	3,172	5.6	5,318	807	304	29.3	70	4.7	607	335	41.4
	1938	365	2,993	3,358	3.4	5,335	706	258	27.9	69	4.8	557	319	41.3
Pennsylvania System .....	1939	198,785	54,753	253,538	23.1	39,761	2,715	1,207	30.4	387	20.6	9,811	100	54.3
	1938	205,451	51,578	257,029	18.5	37,403	2,561	1,112	29.2	309	17.2	7,954	103	45.8
Reading .....	1939	26,638	10,653	37,291	26.9	27,215	2,060	993	34.6	331	15.6	8,478	120	46.0
	1938	27,376	9,075	36,451	19.2	26,775	2,063	953	33.5	284	14.1	7,024	123	40.8
Pocahontas Region:														
Chesapeake & Ohio .....	1939	42,307	11,600	53,907	2.1	58,168	4,013	2,181	46.6	1,117	42.7	20,225	65	66.3
	1938	45,591	10,036	55,627	4.6	55,781	3,783	2,055	46.3	883	34.5	16,297	67	55.3
Norfolk & Western .....	1939	32,184	5,054	37,238	4.9	57,793	3,822	2,041	45.1	1,131	43.5	20,107	82	71.4
	1938	37,471	4,792	42,263	2.2	50,576	3,421	1,776	41.7	771	31.7	15,208	90	60.5
Southern Region:														
Atlantic Coast Line .....	1939	14,918	6,461	21,379	18.9	21,442	1,203	420	20.3	331	25.9	1,401	109	50.0
	1938	17,558	5,853	23,411	22.9	20,815	1,260	429	19.5	281	22.9	1,251	105	44.0
Central of Georgia .....	1939	4,405	2,144	6,549	1.9	22,151	1,143	438	21.0	501	33.3	1,802	115	69.8
	1938	4,859	2,377	7,236	2.2	22,045	1,145	430	20.8	437	30.2	1,686	110	66.3
Illinois Central (incl. Y. & M. V.) .....	1939	28,434	14,845	43,279	3.3	30,262	1,886	764	26.2	658	40.9	4,382	118	49.4
	1938	35,284	14,533	49,817	16.6	28,011	1,735	695	26.2	549	34.5	4,205	120	51.1
Louisville & Nashville .....	1939	36,324	8,153	44,477	23.3	29,232	1,799	863	34.3	650	31.7	5,996	110	73.0
	1938	38,885	8,311	47,196	20.6	26,601	1,709	805	33.6	524	26.6	5,032	118	65.6
Seaboard Air Line .....	1939	11,011	4,226	15,237	4.6	24,382	1,438	557	22.6	535	36.5	1,880	117	56.6
	1938	10,936	4,035	14,971	3.9	23,547	1,452	564	22.4	516	34.9	1,774	115	52.1
Southern .....	1939	22,984	17,541	40,525	11.5	23,356	1,350	536	23.1	559	36.4	3,451	129	69.6
	1938	20,247	16,737	36,984	9.9	22,504	1,321	515	22.4	524	35.1	2,936	131	58.1
Northwestern Region:														
Chicago & North Western .....	1939	36,289	20,208	56,497	9.4	30,371	1,975	752	24.5	363	23.4	2,492	100	49.2
	1938	39,905	19,807	59,712	9.4	29,833	1,887	669	22.5	299	21.2	2,145	102	46.9
Chicago Great Western .....	1939	2,323	3,951	6,274	1.3	33,962	1,856	662	22.6	901	65.0	3,687	113	101.1
	1938	2,590	3,432	6,022	2.6	32,085	1,787	629	22.5	821	60.4	3,430	116	94.9
Chi., Milw., St. P. & Pac. ....	1939	43,767	19,247	63,014	2.5	30,326	1,889	766	26.8	507	31.3	2,912	109	74.4
	1938	47,857	17,452	65,309	2.9	28,847	1,819	727	27.3	475	30.0	2,806	108	74.0
Chi., St. P., Minneap. & Om. ....	1939	3,066	6,297	9,363	8.4	19,008	1,480	614	26.2	537	30.7	2,903	99	66.1
	1938	3,357	6,103	9,460	8.0	19,075	1,474	624	27.1	488	27.8	2,819	99	62.7
Great Northern .....	1939	37,571	16,899	54,470	5.3	37,987	2,682	1,215	34.1	725	35.9	4,648	91	64.1
	1938	37,133	18,971	56,104	4.6	34,540	2,497	1,099	33.1	621	32.9	4,046	99	62.0
Minneap., St. P. & S. St. M. ....	1939	12,523	4,668	17,191	6.2	24,971	1,574	661	26.8	517	31.8	2,066	88	101.1
	1938	13,323	4,084	17,407	5.1	23,052	1,428	595	26.5	446	27.5	1,806	88	90.2
Northern Pacific .....	1939	29,917	7,916	37,833	10.3	33,574	2,177	916	27.0	587	33.7	3,395	123	66.9
	1938	31,015	7,187	38,202	9.3	32,046	2,124	857	26.6	532	32.7	3,055	126	62.8
Central Western Region:														
Alton .....	1939	1,778	6,067	7,845	13.9	36,053	1,420	517	24.0	460	31.6	4,028	109	92.9
	1938	1,781	6,276	8,057	9.2	33,793	1,382	520	24.5	398	27.2	3,721	114	78.4
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